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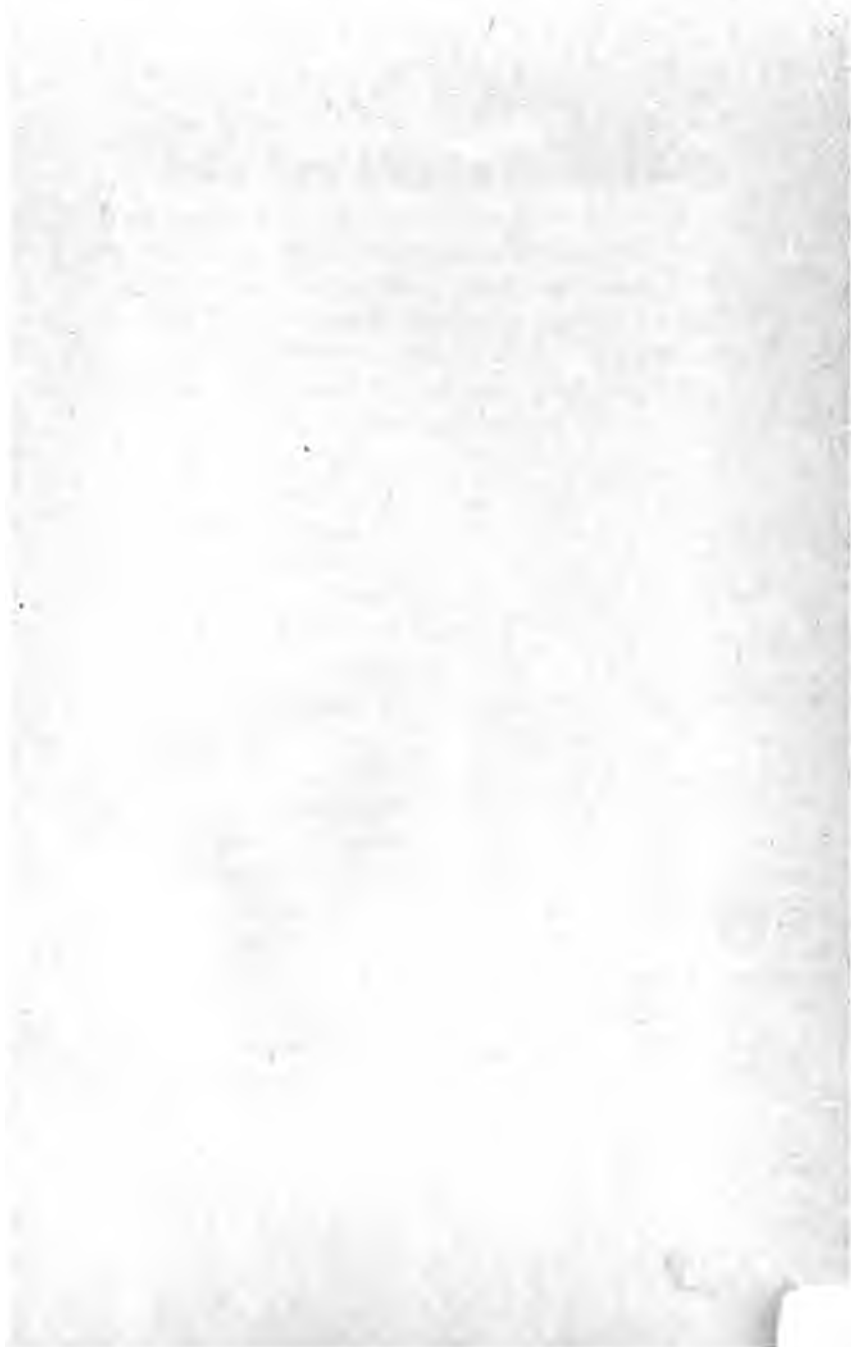


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THE
HOUSEHOLD MONITOR
OF
HEALTH.

BY *J. H. Kellogg* J. H. KELLOGG, M. D., 1852-1943

Editor of "Good Health," Superintendent of the Battle Creek Sanitarium, Author of the "Home Hand-Book of Domestic Hygiene and Rational Medicine," "Man the Masterpiece," "Ladies' Guide," and numerous other works, Member of the American and British Associations for the Advancement of Science, American Society of Microscopists, Etc.


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PREFACE.

THE purpose of this book is to teach in a plain and practical manner, those things which are of the greatest importance in relation to health. The growing interest in everything which relates to health, which has resulted from the recognition of the fact that the race is positively deteriorating physically, if not mentally and morally, has given rise to a great number of books upon this subject, most of which, unfortunately, have been written by those who have given the subject little attention, and who have not been able to present scientific facts as the foundation for the theories which have been advanced, or the rules which they have undertaken to formulate. In the preparation of this work, the author has taken great care to present nothing which has not for its basis, well determined scientific facts.

Great care has also been taken to avoid abstruseness and a heavy or pedantic style. An earnest effort has been made to present as large a number of interesting and practical facts as possible in the limited space afforded by so small a volume. It is believed that every household will find in this volume something which will be of practical value. The author has for many years entertained and advocated the idea that an important part of the work of a physician is the instruction of the people in matters pertaining to health and life. According to his idea, in the good time coming the treatment of the sick will largely consist of a scientific training of the whole body out of the ways of physical wrong-doing into the paths of physical uprightness. An invalid will be put through such a process of grooming, and dieting, and exercise, that he will verily be "born again," his maladies not antidoted, but left behind in the process of growth and vital progress which has been carried on.

The medical man should occupy the position of the conservator of the health of his patrons. He should be a wise sentinel

whose duty it is to warn, advise, and admonish for health's sake, and he should be paid, not for his services to the sick, but for keeping the well in health. When this golden era for the physician comes, it will be his duty to inspect the homes of his patrons, to look carefully into cellars and garrets, to examine drains and water supplies, to see that proper laws are enacted relating to the sanitary construction of buildings, especially with reference to heating and ventilation, and to dietaries and suitable clothing, and to remonstrate against the following of unhealthful fashions. He will follow the children to the school-room, and insist upon the training of the body as well as the mind.

Is it not evidently the duty of every intelligent and philanthropic medical man to give the public, so far as possible, the benefit of the information which he has gained by study, experiments, and practical experience?

The evident relation of health to morals is one of the most powerful arguments for the necessity of works of this kind devoted to popular medical instruction.

It is asserted that many a poor fellow has swung from the gallows simply because the judge happened to have a fit of indigestion. Whether this be true or not, any one who has visited a penitentiary must have been convinced that many a man has been sent to State-prison who ought to have been sent to the hospital. Old Dr. Abernethy used to say, "Every sick man is a rascal." We think the old doctor was rather hard on the sick man; nevertheless, an extended experience with sick people has convinced us that, on the whole, it is easier for a well man to be good, or decent, or pious, than for a sick man. Good health does not always go with good morals, but good morals are certainly more apt to be associated with good health than the contrary.

The total depravity which we often hear talked about is, half the time at least, nothing more nor less than total indigestion. So good a man as Calvin signed the paper which sent Servetus to the stake for heresy. We never could comprehend so inconsistent an action until we learned that just after this atrocious action the great theologian wrote in his diary that he had for several weeks been tormented by a dyspeptic stomach.



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It is high time that those who are seeking to reform the world, should begin to preach the gospel of health. Instead of sending missionaries to the Kaffirs, Hottentots, Kalmucks, and Fiji Islanders, let us send a few messengers bearing the glad tidings of good health to the great "unwashed," the badly fed, the poorly slept, the generally neglected, and the physically depraved multitudes of our great cities. A clean skin and clean morals are not invariable concomitants, but we could never subscribe to the doctrine taught by one of the "Fathers," that the "purest souls are to be found in the dirtiest bodies;" neither should we be found among the admirers of that other saint who was considered to be pre-eminent in piety because he allowed his hair to clot with dirt, and had three hundred patches on his pantaloons.

The best foundation for good morals is good health. The man who respects himself sufficiently to keep his exterior in a wholesome condition is likely to be, by that same self-respect, restrained from polluting his inner man. We never knew any young man to be thoroughly wicked, who took good care of his body.

Quite a lengthy chapter has been devoted to the subject of "Medical Frauds." It would seem that matters pertaining to the life and health of human beings should, above all others, command the highest degree of sincerity and honesty on the part of those dealing with these important interests. It is, however, a lamentable fact that the weakness and feebleness of disease, the distress and suffering occasioned by illness, are made the occasion for the perpetration of the grossest frauds and the practice of the basest deceptions. Human vultures, preying upon the credulity of the sick, and taking advantage of that blind groping for relief so characteristic of the chronic invalid, have amassed stupendous fortunes by the manufacture and sale of the most worthless, nauseous, and in some instances, pernicious compounds. Illuminated by some taking title, these wretched nostrums are displayed in every newspaper in the land, painted on every conspicuous rock along the leading lines of railway travel, and thrust upon the attention of passers-by, on fences, stumps, and trees along every common highway.

Among the most deceptive and the most generally used of these various nostrums are those commonly known as "bitters." Under a variety of alluring titles, bad whisky, flavored with numerous nauseating drugs, is presented as a panacea for all the ills supposed to be alleviated by bitter tonics.

An eminent Eastern chemist has taken the trouble to investigate many of the most common of these "bitters," and with the result of showing that they all contain alcohol in quantities varying from the amount found in lager beer and hard cider to the percentage of alcohol usually present in rum, gin, and whisky. For example, there are "Drake's Plantation Bitters," "Boker's Stomach Bitters," "Russian Bitters," "Warner's Safe Tonic Bitters," and "Job Sweet's Strengthening Bitters," all of which contain alcohol in quantities varying from that of ordinary gin to the amount found in West India rum and Kentucky whisky.

Again, there is "Hostetter's Stomach Bitters," the chief ingredient of which is alcohol, which is present in the proportion of 44 3-10 per cent, while "Dr. Richardson's Concentrated Cherry Wine Bitters," recommended to be taken in doses of half a wine-glassful, *or more*, three times a day, "or whenever there is a sensation of weakness or uneasiness at the stomach," contains nearly as much alcohol as proof-spirit, or 47 5-10 per cent.

The reader can readily see that the manufacturers of these nostrums are deliberately engaged in the business of "drunkard making," the medicine being prescribed in intoxicating doses, and the patient urged to take a dram in addition "when-ever there is a sensation of weakness or uneasiness at the stomach."

But we will not consume more space in anticipating the contents of the volume, trusting that even a cursory examination will disclose sufficient interesting matter to command the reader's attention, and that such a use of this little work will be made as will enable it to accomplish a useful mission in relieving the suffering of the sick and afflicted, and especially in the prevention of sickness and disease.



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The Colo-Clyster
Inunction

ACCIDENTS

Drowning and Resuscitation
Poisonous Gases
Illuminating Gas
Hanging
Choking
Lightning Stroke
Sun-Stroke
Hemorrhage
Nosebleed
Bleeding from the
Cuts
Dressing for Wounds
Bruises
How to Cure a Sprain
Fractures and Dislocations
For Scalds
Freezing
Incubation Period
What to Do for Burns
Insect Stings
Dirt in the Eye
Lime in the Eye
Foreign Bodies in the
Eyes





HEALTH HINTS.

“HEALTH is wealth” is a trite maxim, the truth of which every one appreciates best after having suffered from disease. Indeed, health is a most priceless treasure. When deprived of it, we are willing to exchange everything else we possess to regain it; yet when well, we squander it ruthlessly, disregarding its plainest rules, seemingly regardless of the consequences. It is only when sick, and suffering the result of transgression of nature's laws, that we begin to appreciate the value of health, and the importance of regarding carefully the conditions upon which it depends.

State and national health boards and committees certainly do excellent work for communities and nations; but the real influence which they exercise over the health of individuals is insignificant when compared with that which may be, and indeed is, exercised by the matrons of the various households which make up villages, cities, and nations. City authorities may exercise a rigid surveillance over all the avenues through which disease is known to enter; they may keep the public streets cleanly, introduce

costly means of supplying water, and cause the removal beyond the suburbs of slaughterhouses, tanneries, soap-boiling establishments, and noisome chemical works ; but if the seeds of death and disease are allowed to germinate and flourish in each separate dwelling, and around each fireside, what favorable results can be expected ?

All reforms must begin at home, to be effective ; and we would urge upon all parents the importance of careful attention to the simple suggestions which are herein offered, by means of which they may be able to save themselves and their families from numerous illnesses, with attendant inconveniences, expense, and suffering.

Fresh Air.—From the first quick gasp of infancy to the last feeble sigh of old age, the prime necessity of life is air. Air is food for the lungs, as bread is food for the stomach. Millions more people die from want of lung food than from a deficiency of other aliment. The Creator has provided the necessary article in generous abundance, fresh, pure, and free to all. If we do not get enough, it is our own fault ; for when we close our doors and windows most securely, this vitalizing, invigorating element is whizzing and howling close around outside, seeking to find an entrance.

People who nail up their windows, stop every crack and crevice in the walls, line the door cas-



ing with felt, and fix a patent thing under the door as a sort of air-trap to catch the occasional whiffs of pure air which might otherwise get in, are barricading themselves against their best friend. A man who should so studiously and deliberately deprive himself of the means of procuring ordinary food, would be pronounced a suicide. Is he any less a transgressor—though ignorantly so—who deprives himself and his family of a still greater necessity, pure air?

The demand for pure air is the most imperative of all the wants of the system. An individual will die sooner from lack of air than from deprivation of any other of the essentials of life. A person may live several weeks without solid food of any kind, several such cases having been noted by eminent authorities. When deprived entirely of drink, life sooner becomes extinct. But if an individual be deprived of air, death occurs in a few minutes.

Sources of Impure Air.—The sources from which the air may become contaminated are so very numerous that we cannot dwell at length upon all of them in so concise a treatise as this. We can only notice some of the more common.

Poisonous Gases.—Of the numerous poisonous gases which mingle with the air we breathe, *carbonic acid*, or more properly, *carbon di-oxide*, is the most common and abundant of all. This gas is heavier than air, and consequently it col-



lects in such low places as deep wells, old cellars, caves, and deep valleys. It is produced by combustion and decay in vast quantities, and would soon accumulate to a fatal extent were it not for the fact that while it is a fatal poison to man, it constitutes a necessary food for plants.

One important fact to be remembered respecting the properties of this gas, is its want of odor when pure ; so its presence cannot always be detected by the sense of smell, as can most poisonous gases.

In Italy there is a curious cave the bottom of which is covered with carbon di-oxide to a depth of about two feet. Travelers can explore the cavern with perfect impunity ; but dogs or other small animals which accompany them, are quickly suffocated.

This gas is produced in great volumes in the burning of lime, being driven off by the excessive heat. Cases of poisoning by this gas have occurred, in which persons have lain down to sleep beside the warm kiln, and have been suffocated by the escaping gas.

Amount of Carbonic-Acid Gas Produced.—

This gas is formed within the body, and finds its way out through the lungs. An adult man produces about five gallons of the gas per hour. A gas-light produces several times as much. An ordinary candle produces quite a considerable quantity. Large quantities are produced in a



stove or fireplace, but that which is generated in this manner is usually carried away with the smoke, and does not escape into the room.

Carbonous Oxide is an exceedingly poisonous gas which is formed by imperfect oxidation of the fuel, which is frequently the result of deficient draft. The gas is often found in air-tight stoves furnished with close dampers. One remarkable property of the gas is its penetrating power. It will pass directly through cast iron, especially when it is heated. A few years ago a whole school was poisoned by this gas, several scholars nearly to a fatal extent. It paralyzes the blood corpuscles, and thus renders respiration impossible. It is a much more poisonous gas than carbonic acid, and is fatal in much more minute doses. In the case of the school referred to, the teacher had turned the damper, while the stove was hot, so as to cut off the draft, and in a short time discovered that a large share of the students were falling into a state of stupefaction. This is a good illustration of the importance of always leaving sufficient draft to carry off the products of combustion. As this gas, like carbonic-acid gas, has no odor, it can only be detected by its effects.

Sulphureted Hydrogen is a still more poisonous gas which frequently finds its way into the air which human beings breathe. Fortunately, it has a very bad smell,—the characteristic odor

of rotten eggs, in which it is always present. This gas is developed wherever animal matter is undergoing decomposition. It is poured forth in volumes from cesspools, sewers, gutters, drains, privy-vaults, neglected cellars and cisterns, and every other place where animal substances are allowed to putrefy. It is this gas which gives to most decaying substances their offensive character. In the gutters of back streets and alleys in our large cities, this gas is sometimes produced in such enormous quantities that its active chemical properties become very perceptible, as will be shown by the following anecdote related by a professor of chemistry in one of our State Universities:—

“A young lady who was entirely innocent of any knowledge of chemistry or chemical facts, emerged from an elegant mansion in New York City, fully equipped for an afternoon promenade, with face artistically painted *a la mode*. Her course, unfortunately, lay for a little distance through a portion of the city where the drainage was imperfect, and the air was consequently redolent with that wonderfully pungent and active gas which is so characteristic of rotten eggs—sulphureted hydrogen. Of course the lady could not be unconscious of the presence of some noxious element in the atmosphere; but she was nevertheless wholly ignorant of its chemical properties. Her ignorance did not,



however, deter the gas from manifesting its most vigorous affinities for the lead paint upon her cheeks, of which she had abundant evidence as she stood before a mirror, on her return home, and viewed the swarthy appearance of her countenance, which would have been very becoming to a representative member of the African race."

Ammonia, and Sulphurous Oxide, with various other noxious gases, find their way into the air in numerous ways, and exert a deleterious influence upon the health.

Dust.—It is next to impossible to obtain air wholly free from dust. Its constant motion lifts and holds suspended little particles of various substances which are more or less injurious to health, unless the quantity is very small indeed. Some trades, as stone-cutting, coal-heaving, rag-picking, cotton and wool spinning and weaving, and other avocations which involve the production of considerable quantities of dust, expose the workmen to an atmosphere loaded with fine particles, which are drawn into the lungs with every breath, and, finding lodgment there, may induce irritation, and still more serious disease of those organs. By a wonderful provision of nature, the finer particles of dust, if in small quantity, may be wholly removed so that they will not pass down into the more delicate air-cells of the lungs. But if the quantity of dust is

great, this provision fails to afford protection.

The inhalation of dust is one of the causes of consumption. Post-mortem examination of the lungs of persons who had died from this cause showed the lungs to have acquired the color of the particles inhaled ; and, in some cases, they contained so large a quantity of sand that they felt gritty to the touch.

Great care should always be taken to avoid dust as much as possible. In sweeping carpets and dirty floors, a person is exposed to injury unless some precaution, such as sprinkling the floor or moistening the broom, is taken to prevent filling the air with dirt. There are very few people who would not turn with disgust from food which was filled with particles of coal or sand, covered with dust, and gritty to the teeth. Yet the same persons will take their gaseous food in precisely the same condition, without remonstrance.

Organic Poison.—Gases, germs, and dust are most prolific sources of disease and death which attack man from the air ; but there is yet another enemy of life more potent still, which lurks, too often unsuspected, in the air we breathe. Very little, indeed, is known of the real nature of this poison, since it has, in considerable degree, eluded the efforts of the chemist to submit it to analysis ; but it is of organic origin, and hence is known by the term *organic*



poison. This poisonous element is introduced into the air chiefly by means of respiration, together with exhalations from the skin. It is one of the most noxious poisons ever present in air. It will produce death much sooner than most other impurities found in the air. Experiments upon animals have shown that a mouse will die in a few minutes when confined in air heavily charged with this poison.

The moisture which condenses on the inside of the windows of an occupied room in a cold day, contains the poison in solution. If a little is collected in a vial and set away, it will soon become intensely fetid and offensive. It is this poison which gives to an unventilated room the close, fusty odor with which every one is familiar. One who has been long in the room will not observe it ; but it is very distinct to a person coming in directly from the pure air outside.

How to Ventilate.—The only way to get fresh air is to obtain it from out-of-doors, by exchanging the foul air within for pure air without.

How much fresh air do we need? Every man needs enough to dilute the poison which he exhales sufficiently to render it harmless. To effect this a quantity of air 5,000 times as great as the amount of carbon di-oxide produced, is required. In other words, 5,000 gallons of pure air are necessary to render harmless one gallon of carbon di-oxide. A man produces a gallon of

this poison every twelve minutes, or five gallons an hour; hence he requires 5,000 gallons of pure air every twelve minutes, or 25,000 gallons each hour—more than 3,000 cubic feet.

To ventilate well, there must be two openings,—one for the air to come in at, and the other for the air to go out at. What! shall we open the windows at top and bottom on a cold wintry day?—Certainly. Cold air is not poison. Plenty of air and a rousing fire are cheaper in the long run than foul air and less fire.

But will not cold air produce colds, and lung fevers and pleurisies, and consumptions? People do n't catch cold in open sleighs nor when walking in the wind. Drafts of cold air upon a small portion of the body only, will occasion cold; but there need be no drafts. Avoid them in this way:—

Take a strip of board, three or four inches wide, just the length of the window-casing. Fit it beneath the lower sash. This makes an opening between the two sashes where they overlap. Here the air can enter, and being thrown upward toward the ceiling, it will be productive of no harm to any one.

Another way: Lower a window at the top on one side of the room, and on the opposite side raise another a little at the bottom. Place a screen of fine netting in front of each, and the room will be pretty well ventilated without drafts.

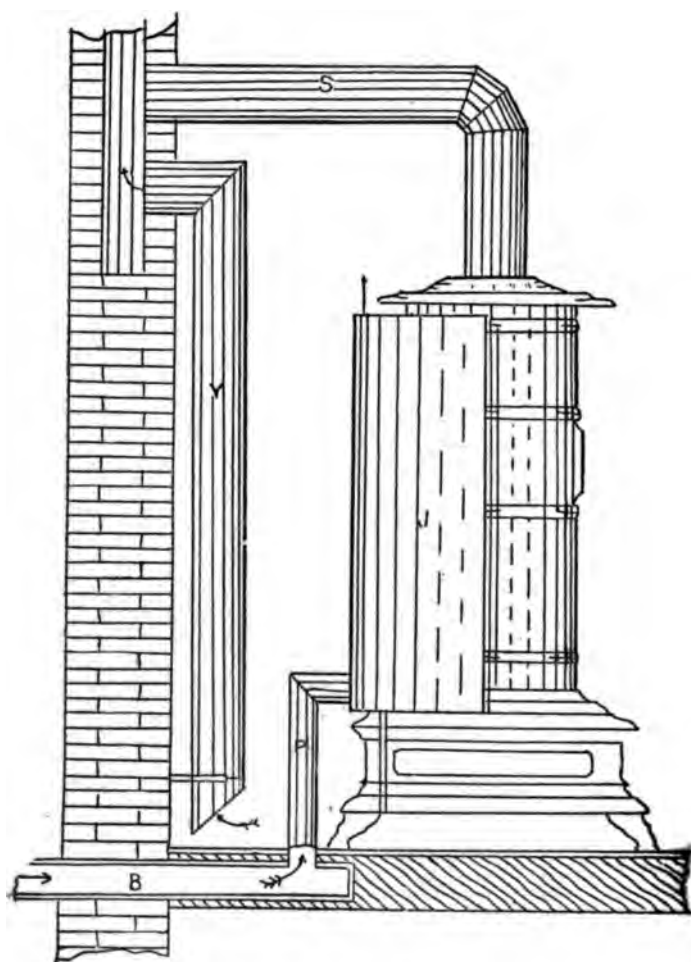


Unless a strong wind is blowing, the window should be lowered one inch for each occupant of the room. A window should be raised an equal amount upon the opposite side, to allow a circulation of the air.

The old-fashioned fireplace was a most efficient ventilator. It is a good omen that fireplaces have again come into use. The most fashionable parlors in large cities are now heated by them.

If flues are used in ventilating rooms, it is absolutely necessary that the air in them should be heated several degrees higher than that in the rooms, to secure a draft.

Simple Method of Ventilating Common Dwellings.—No expensive apparatus is necessary to supply an abundance of pure air to any dwelling. If a house is not quite completed, ventilating shafts for conveying away the foul air can be provided by building the chimney of extra size, and by means of a partition, making two compartments, one to be used for ventilation, the other for conveying away the smoke from stoves or fireplaces. If a house is finished without any way being provided for ventilation, as is the case in the majority of homes, an arrangement may be made like that shown in the accompanying cut, which though less elegant than more expensive ventilating arrangements, is none the less effective, if properly con-



SIMPLE VENTILATING APPARATUS.



structed. The figure represents a stove, one side of which is incased in a sheet iron envelope, J, which communicates by the pipe P, with the outer air through the duct B. Through this tunnel the fresh air will enter freely, being warmed by contact with the heated surface of the stove; then, rising to the hot ceiling and passing to the outer sides of the room, where it becomes cool and falls to the floor, it is drawn up into the pipe Y, through which it passes into the chimney, just below the opening for the stovepipe. An arrangement of this kind can be put into any house at an expense of from ten to twenty dollars, and will secure an ample supply of fresh air at all times.

Tests for Bad Air.—1. Air with a bad odor is unfit to breathe.

2. Air with a fusty odor is surcharged with organic matter, and dangerous.

3. Carbonic acid, or carbon di-oxide, is the most easily detected of the ordinary impurities of the atmosphere, and is a pretty accurate gauge of the condition of the air as regards health.

The most reliable authorities agree that the proportion of carbonic acid should never be allowed to become greater than 6 parts in 10,000; hence it is important to be able to detect the presence of this gas, especially since, as before remarked, it cannot be readily detected by any of the senses. Fortunately, this may be accom-

plished by very simple means, the use of which requires only ordinary care. The materials required to perform the test are a supply of perfectly clear, saturated lime-water, and four bottles or jars of different sizes, the sizes required being the following: one jar or bottle capable of holding exactly 16 ounces, or one pint; a second holding $10\frac{1}{2}$ ounces; a third holding 8 ounces, or one half pint; and a fourth capable of holding $6\frac{1}{2}$ ounces. The jars should have necks large enough to admit of perfect cleaning of the whole inside, and the greatest pains should be taken to remove every particle of dirt or dust from the inside as well as the outside, with water. To apply the test, fill the jar with the air to be tested. This may be done either by drawing the air out of the bottle through a straw or tube, or by filling it with pure water and letting the water escape. Great care should be taken in sucking the air out of the bottle that the breath be not allowed to enter. To determine the amount of carbonic acid present, use the smallest jar first. After filling it in the manner described, pour in a large tablespoonful of clear lime-water. Close the mouth with a clean stopper, and shake vigorously for five minutes. If the lime-water becomes cloudy, carbonic acid is present in the air in the proportion of 10 parts to 10,000. If it does not become cloudy, repeat the experiment with the next



size, or half-pint jar. If the lime-water becomes cloudy in this, the proportion of carbonic acid is 8 parts in 10,000. This proportion may often be found in the rooms of dwelling-houses, and sometimes in crowded streets and narrow alleys. If the lime-water does not become cloudy in a jar of this size, the next size should be used in the same manner. The cloudiness appearing in this jar indicates the presence of 6 parts in 10,000. This is the largest proportion which may exist without actual danger to health. If no cloudiness appears without the employment of the largest jar, the proportion is only 4 parts of carbonic acid to 10,000 of air, and the air is practically pure.

Germs: What They Are.—Chemistry brings to light poisonous gases, the presence of which is confirmed by the sense of smell; but the microscope makes a still more important discovery; viz., the presence of myriads of specks of life, to which the name *germs* has been attached. Wherever decomposition is taking place, these organisms are present in countless numbers. It is perhaps a question whether they are a product of decomposition, or its cause; but it is certain that they are never absent from any process of decay. Infinitesimal in size,—so small that millions may range with unrestricted freedom in the smallest drop of water,—they are yet more potent for harm



to human life and health than all other agencies combined.

Nine tenths of all diseases, if not all, are caused by specific low organisms. Among those which have been already distinctly isolated, are the microbes of consumption, typhoid fever, yellow fever, dysentery, cholera, lock-jaw, pneumonia, and a long list of diseases whose exact number is not known. Even such simple diseases as boils, run-rounds, warts, etc., have been traced to germ causes, and the decay of the teeth is also chargeable to the action of germs. There is a great difference between these different bacilli, just as there is between large animals. A fence which will be perfectly safe against cattle may prove of no account against dogs; and where pine trees will grow we may not be able to raise potatoes. Similar differences exist also between these microbes.

All of these germs of diseases require moisture for their germination and growth. They are not killed by dryness; they only do not develop. A well-authenticated case is on record where the plague, which we have now hardly any reason to doubt is caused by a bacillus, broke out in a town in Germany 200 years after the last plague had been there,—and while no cases of plague were within 1,000 miles,—after the tearing down of an old house, in the masonry of which a mummy was found that had been ce-



mented in. From records it was evidently the corpse of a person who had died of the plague 200 years before. This shows the wonderful tenacity of microbes. They will survive freezing, having been known to actively exist in a solid cake of ice. Medical science has been revolutionized by their discovery.

There is some difference of opinion respecting the exact nature of the germs which give rise to different diseases, and as to the exact mode of their development and transmission; but it is certainly settled that decomposing matter furnishes a fertile soil for the development of the germ-causes of the diseases mentioned and many others. Uncleanliness is now much better understood as being the factor in spreading diseases. Virchow examined the nails of school-children, and underneath them he found, with particles of dirt, bacilli and eggs of all the intestinal parasitical worms, which, of course, would be eaten by the children with their daily bread.

But what do you know about these germs you talk so much about? says one. Is not this all an hypothesis? We answer, The connection of germs with the phenomena of decay and disease, is something more than an hypothesis. A germ is not an hypothetical thing, like the ether of physical science. Germs have been seen and studied by the aid of powerful microscopes, with

the greatest care. Their species, modes of development, favorite habitats, and the conditions essential to their existence, have been worked out with almost as much completeness as the same points with reference to the most common of our higher plants and animals.

Uses of Germs.—Germs play an important role in the cycle of existence. Without their agency, the world would soon be covered with the dead but not disorganized carcasses of the millions of animal and vegetable forms which die each instant. It is the function of some of these infinitesimal creatures to reduce back to an inorganic state, animal and vegetable forms which have performed their part in the world, and are no longer of service. The moment an animal or a vegetable dies, even before the last agonies are over, these invisible scavengers begin their work, and their labor is carried forward untiringly until completed. This is what we call decay, or decomposition. Seal up a decomposable body hermetically, taking care to exclude every germ, and it will keep as long as the receptacle lasts, without the slightest taint. This is what the housewife endeavors to do in the process of fruit-canning. She boils the fruit to destroy the germs it contains, and puts it in the cans while it is yet hot. If the work is well done, it is a success; but if one little germ escapes destruction, the labor is in vain.



These same germs are helpful in the making of bread. In destroying a portion of the starch of the flour, they occasion the evolution of carbonic acid gas, which in rising through the dough, makes it light. They are in one sense friendly, since they are the instruments of the removal of a vast amount of dead and useless material which would otherwise soon bury us by its rapid accumulation. Wherever decomposition is taking place, these germs are present in prodigious numbers. One evidence of this is the presence of large numbers of flies in such places. The common house-fly subsists largely upon these same germs, as well as upon the same kind of food as its microscopic competitors. Have you ever watched a fly, or hundreds of them, on a summer day, circling round and round, apparently without any particular end in view? I used to wonder why the little creature should spend its time so aimlessly. The reason is readily found. Catch and kill one, if your conscience will permit you, and put it under the microscope. Observe its wings. These filmy objects, when magnified, present a formidable array of spikes and needle points. Here and there among them are some of the very germs which we find in the air, in water, in decomposing matter. Now let us dissect the fly, and examine the contents of its stomach. Here also we find great numbers of those same germs.

Now let us watch the little creatures again. Here is one which has been soaring about, and now alights, apparently to rest, upon the window-pane. Watch him a moment. Now he is standing on the forward four of his six legs, and brushing his wings with the hinder two. He brushes a few seconds, then rubs his feet together, then brushes again, and again rubs his feet, then passes something from one hind foot to the middle one, then to the front foot of the same side, then rubs the two front feet for an instant, and brings both feet to his mouth; then he repeats the process. Now he is brushing his head in the same way. Do you suppose he is making his toilet? Quite a mistake. The fly is not so fastidious as to spend so much time over his appearance. He is making a meal of germs. He soars around until his wings are loaded, then rests upon some object while he scrapes them together, rolls them into little balls, and makes a meal of them. Every time you see a fly going through such antics, think of germs, and hunt around for the hotbed in which they are propagating.

Perhaps there was something more than sentiment in the old nursery rhyme, "Don't kill the fly," etc. But let us not be too hasty in our conclusions. Pretty soon one of those germ-eating flies will come along and put a punctuation mark on the morsel of bread you are about



to eat. If you examine that same punctuation mark, you will find it full of germs ; and so you are going to eat them after all. The only real service done us by flies is that of a sort of sanitary thermometer, by which we may judge of the abundance of germs about our premises.

Germs and Foul Odors.—Noxious gases and disease-germs are usually associated together,—a fortunate fact, as it enables us to detect the dangerous character of an infected atmosphere without the trouble of a chemical analysis. It is possible for the air to be swarming with disease-germs without an offensive odor being present ; but it seldom happens that we have an odor of putrescence without the presence of noxious germs. It is perfectly safe to say that a foul-smelling air is a dangerous air. If our eyes were microscopic, we should daily, hourly, behold sights that would appall the stoutest heart.

Sources of Germs.—Perhaps we may with profit consider for a moment some of the most common sources of these deadly enemies to human life. We need not seek long for an illustration of the source from which these unseen foes sally forth to prey upon our dearest friends, or upon ourselves. Let us picture an average human habitation. We have a fine, commodious dwelling, ample room, plenty of comforts of every sort, every convenience that money can procure or ingenuity devise. It would seem that

the occupants ought to be hale and hearty ; but they are not. Every now and then death makes a visit to the household, carrying off its brightest members, ruthlessly slaying father, mother, brother, sister, whether in the prime of life or in feeble infancy. Why this sacrifice, this ruthless slaughter ? Who are the invisible monsters invading this happy circle ? In olden times it would have been said, "An evil spirit hath done this ;" but the days of witchcraft and superstition have gone by, and we must look for some more rational solution of the mystery.

A Cellar Investigated.—Let us look around. We will begin our investigation at the lowest portion of the house, and proceed to examine the cellar. The sense of smell at once informs us that a quantity of decaying vegetables has accumulated there, having been undisturbed, perhaps, for months, and are pouring forth into the air deadly emanations, the effect of which has already been described. Through the open cellar door, through the cracks in the floor, through the porous partitions, and through a thousand channels, this stagnant, poison-laden air finds its way to the living-apartments of the household, and into the lungs of the occupants. Every nook and corner of the dwelling is haunted by that pestilential, disease-producing odor.

A Peep into a Kitchen.—We ascend to the kitchen. Here we find an accumulation of what



everybody recognizes as kitchen smells. In one corner stands the antiquated wood-box, the mute receptacle of a hundred things besides its daily supply of fuel. If the witnesses were not mute, we might listen to a surprising tale of insanitary transgressions connected with that homely piece of furniture. Let us turn out upon the floor the contents, and scrutinize them. Shade of Hygeia, what a smell! The nose makes protest with a sneeze. Suppress your emotions, and proceed to examine. Rotten bark, decomposing apple cores, odds and ends of almost every imaginable eatable, the remnants of the cozy nest in which several generations of mice have been reared, a moldy, putrescent conglomeration of everything perishable that enters a household, teeming with filth, redolent with putrefaction, and crawling with vermin,—such are the contents of the average kitchen wood-box. Not a few such have we seen, and a still larger number, out of sight but conveniently near, we have smelled.

In another corner is the inevitable “sink,” made of wood, and saturated with decomposing dishwater. Hiding in its secret corners are ancient rags in an advanced state of decay; and the drainpipe connected with its bottom, affords an open channel for the ingress of pestilential odors from the cesspool just outside the door.

The plastered walls, saturated with the ac-

cumulations of a quarter of a century, pour forth an odoriferous stream of gaseous filth, which is unobserved only because overpowered by the other sources of contamination.

· **A Pantry Full of Germs.**—But we must not omit to take a peep into the pantry close at hand, before proceeding elsewhere with our investigations. I wonder if the goddess of health ever looked into a modern pantry! If she did, it is a marvel that she did not send her emblematic serpent on a commission of punishment among the cooks, for such flagrant infractions of her laws. Our olfactories are the only guide necessary to enable us to discover the whereabouts of the precious corner where are hoarded the provisions for daily consumption by the family. An odor of sourness, which betrays unmistakably the presence of decomposing milk, leads us to the door-way of the pantry, and we enter to make a closer inspection. With the exception of a few pans of milk which has lost its useful properties, and acquired some which are not useful, all looks neat and orderly; a musty odor not perceptible, perhaps, to those who have become accustomed to it, but apparent and significant to the sensitive olfactories of a sanitarian, attracts our attention to sundry drawers and corners which might otherwise have escaped notice. We will not pain the sensibilities of our hearers with



all the possible revelations from an investigation of the hidden recesses of the ordinary pantry. Fragments of moldy bread, stale food of various kinds, perhaps a churn, with its souring, fermenting contents awaiting the weekly churning-day, are but a few of the items which would be included in a complete inventory. It is a magnificent place for germs of every description to hold high carnival. And they do. Every housewife knows that a pan of fresh milk placed in a close room or pantry alongside a pan of sour milk, sours much sooner than if set in a perfectly fresh and wholesome place.

A Sitting-Room Inspected.—Let us take a look into the sitting-room, the chief living-room of the house. Here again we are pretty sure to find a wood-box, nicely painted or papered outside, but no less uninviting inside than its humble brother in the kitchen. We find no kitchen sink with its unsavory odors, but that source of contamination is within easy smelling distance, and so is still able to do its work of mischief. So, too, the putrescent fumes from the cellar and pantry are plainly perceptible, and the walls are covered with a layer of decomposable matter condensed from the vapors rising from the cooking of vegetables, boiling of soiled garments, and other culinary and domestic operations. Many other such layers have been

formed and buried by the new layer of paper and paste added every two or three years, or oftener, until, as we have seen in some instances, as many as eight or ten layers may be counted. Where could a more fertile field for germs or parasitic fungi be found?

A dark spot a foot or two in diameter marks the place where, as the housekeeper says, the paper has been stained as the result of a defective roof. A close inspection shows something more than a stain—a flourishing crop of mold. Put a speck of that same mold under the microscope, and we behold a forest. Every twig bears fine, large, round fruit, which consists of sacs filled with minute specks called *spores*. Some of the sacs are ripe and bursting, throwing the spores with which they are filled in every direction. This what is taking place on the wall, and those same spores fill the air all around, getting into the dough and making the bread sour, creeping into the fruit cans, stealing into the pantry, and spoiling the labor of the housewife in a hundred ways, besides creating a musty odor which is constantly inhaled by the occupants of the house, and possibly conveying to them the seeds of disease and death.

A beautiful carpet upon the floor conceals beneath its delicate shades a conglomerate accumulation of contributions from every source of impurity within the dwelling and without.



Let the children romp about the room a few minutes, and see what a cloud of witnesses arise to testify that the shades of death are lurking just beneath its graceful patterns. Every day in the year this "Pandora's box" is compelled, by a vigorous application of the housewife's broom, to send out its miscellaneous store. Each sweep of the broom raises a cloud of germs and spores, and decomposing and decomposable fragments garnered from the kitchen, the yard, the street, the gutter,—a thousand sources, until the air becomes almost as opaque as the densest fog. Every living occupant of the room prudently retires, even to the household cat, except the sweeper, who plies her broom with industrious activity, with head and nose enveloped in the folds of a handkerchief, which acts as a protector and a strainer. When the commotion is ended, the dusty filth settles upon the tops of bookcases, cupboards, and other articles of furniture, among the folds of lace window curtains, upon the ceiling and walls of the room, and wherever it can find lodgment. Pretty soon the housekeeper comes back, and with a duster stirs up anew the dust which has settled upon tables, chairs, window sills, picture-frames, and other articles within easy reach, driving it up to higher lodgment, from which it is destined to be constantly swept by currents of air, movements of windows, swinging of hanging articles,

and in various ways to be breathed, after all, by the daily occupants of the house, who thought to escape by avoiding the commotion created by the morning's sweeping. Such air, like the mines of Nevada, has "millions in it," all alive, and ready to develop, in a fertile soil, into disease and death.

An Infected Parlor.—But we have not seen all yet. Here is the parlor, with its close, fusty smell, and its chilly dampness. An "odor of sanctity" pervades the place. It is sacred to use on great occasions, when its death-dealing walls are made to witness the still more deadly depredations of a fashionable festival. Upon its cold walls are condensed the steam from kitchen and wash-room, and the organic filth carried with it. "What makes the walls of my parlor sweat so?" has been asked me many times by housekeepers who were annoyed by the dampness of their parlor walls and ceiling, often giving rise to mold and mildew. The explanation is already given. The sunshine never gets into this sacred corner of the dwelling, or at most only a glimmer now and then. Its walls are never disinfected by the sun's full, warm rays. Hence its air is constantly charged with death-dealing properties, which are ready to exhibit their potency whenever favorable opportunity affords.



A Death-Trap.—And there is the parlor bedroom, a veritable death-trap, containing all the dangers enumerated for the contiguous apartments, and more. How many useful clergymen have been sacrificed at the very height of their usefulness by incarceration in some of these insanitary bedrooms! How many itinerant missionaries have arisen after a night spent in such a place, with rheumatism or consumption fastened upon them!

Unhealthful Sleeping-Rooms.—Let us ascend to the upper part of the house. Here, you may say, we shall find a better condition of things. No kitchen with its foul smells, no pantry with its decomposing food, less dust, and no wood-boxes; but we must not congratulate ourselves too soon. Here is an open stairway in direct communication with the lower rooms; and the heated air from below, which ascends to the apartments above, carries with it its gleanings from cellar, sink, pantry, dusty carpets, moldy walls, fermenting wood-boxes, and the various contributions to the insanitary condition of the house, so that the upper rooms become a receptacle for the overflow from below. Closets, garrets, and unventilated rooms in the upper part of a house become, in time, charged with most virulent enemies to health.

What's under the House?—We have not

finished our indoor inspection ; but we must hasten, so let us make a survey of the exterior. But before we pass to the outside, let us pause a moment to ascertain the cause of that peculiar sickening odor which seems to emanate from the hall. The occupants of the house say they noticed a bad smell there last fall, and now as the warm days of spring are coming on, it has reappeared. What is it ? Each member of the family has sniffed it, and scolded at it, and echoed "What is it ?" a hundred times. It is not moldy walls nor full wood-boxes ; gas from the sink-pipe, nor decaying vegetables in the cellar ; sourness from the pantry, nor ancient dust from under the carpet. Possibly it may be something under the floor. No one has ever taken the trouble to look and see, as the space under the floor is not spacious enough for one to visit without considerable inconvenience ; besides, there is no ready means of access to the inclosure except by making a hole through a stone wall, and so the matter has not been investigated. Suppose we step outside, and undertake the task. What do we find ?—Perhaps a dozen rats who were fed arsenic in the cellar or pantry, and sought out this as a convenient place to die in, or may be maliciously thought to retaliate for their own poisoning by poisoning their destroyers. Perhaps the pet rabbit which mysteriously disappeared a few



months ago, apprehending approaching death from surfeiting, has sought this secluded spot to breathe his last, as evidenced by his decomposing remains. At any rate, there is great need of the services of a scavenger, and we wonder how it would be possible to invent a more ingenious contrivance for accomplishing the physical ruin of a family, if such a fiendish design were to be executed.

Sanitary Survey of a Back Yard.— Now let us glance around a little. The front yard is orderly and inviting, of course. Graveled walks, a smoothly cut lawn, a few elegant shrubs and evergreens, all suggest the highest degree of neatness and good taste. Let us step around to the back yard. What a contrast! Close by the door stands a garbage-barrel, which testifies to at least two of the senses that its history goes far back into the dim past. Once a week the milkman comes with a cart, and empties the unsavory receptacle, stirring to the bottom its reeking contents. (Let me whisper in parenthesis that some of the same comes back in tin cans and earthen jars. Swill-milk is not an unknown article, even in rural districts, where hay and grain bring a good price.) At all hours of the day and night this half-rotten receptacle of decomposing organic matter sends cut upon the air its filthy emanations.

Near by is a brown-looking spot of earth, over

which are eagerly crawling myriads of the first insects of the season, and from which ascends a noxious vapor, visible in the cool morning air, but not difficult to discover if not visible, by its pungent, nauseating odor. This, the gardener explains, is the dumping place for the dishpan and the washtub since the drainpipe became clogged, a few months ago. Frozen up during the winter, it was annoying only by its unsightly appearance ; but now that the vernal sun has come, the accumulation of months sends forth a constant stream of noisome smells, which are too often experienced to need further description.

A rod or two from the house we notice a little depression in the ground, This, we learn, is the location of the cesspool. The boards which once formed its roof have rotted away, and allowed the overlying earth to drop into the receptacle beneath, which originally consisted of a bottomless box or barrel, half-filled with stones, and connected with the kitchen sink by means of a long wooden box. The wood has now nearly disappeared, a few rotten fragments only remaining. Out of this putrescent hole rises a stench which finds no counterpart elsewhere than in a similar contrivance for domestic poisoning. Horrible, nauseating, loathsome, are faint words to describe the dense vapors which ascend from this repository of liquid filth.



A few feet distant is an edifice which we are at a loss to know how to describe. A correspondent was in the same predicament when he sent us a clipping for publication which he said was "rescued from a place consigned to infamy." The edifice referred to probably ought to have been consigned to infamy, if it had not been, and the same should be said of most others of the same class. Though carefully guarded from observation by a close lattice covered by clambering vines, its presence is easily detected, and that without close proximity. How often, as we walk along the streets at night, does the air, which Heaven sends us pure, sweet, and potent with life-giving energies, come laden with poisonous exhalations from dozens of such sources, and freighted with the agencies of death. The vault of an outhouse often becomes a much more dangerous enemy to human life than a powder-magazine or a nitro-glycerine factory; yet the latter are by law required to be located far apart from human habitations, while the former is tolerated in the closest proximity to human dwellings, often even under the same roof with human beings.

Death in the Well.—In the midst of all these sources of the most dangerous filth, is located the well, from which is to be daily drawn one of the most essential of the necessities of

life. Is it any wonder that the cup of life is often transformed into the cup of death? Only think of the condition of a family with Death enthroned in the well, and daily dealing out his poisonous draughts to its members! The mysterious Providence which deprives a family of its loved ones through the agency of typhoid fever, may, in a majority of instances, be proved to be a mysterious connection between the well and a privy vault or cesspool.

A settler in a new country generally digs two holes in the ground after erecting his humble cottage. Into one goes all the filth, offal, and slops; out of the other comes all the water for family use. These holes are usually so near together that the contents mingle, so that what goes into one comes out of the other. In an old-settled country, a man in making a home digs two or three holes for filth and one for water, so that the latter is often surrounded by the former. As most of the water from the well is returned to the holes for the reception of filth, a very large share of it may find its way back to its original source,—a very economical arrangement when the water supply is short, so far as the water is concerned, but not to be recommended if health and long life are valued.

If we inquire the location of the cistern, we shall very likely find it under the house, and conveniently near the drainpipe, so that in case



of leakage of the pipe, the foul water from the sink may find its way with the greatest facility into the cistern.

At no great distance we may find a stable with its filthy accumulations, which are drenched at every rain, and contaminate the soil for many feet around, and to an unknown depth. Here is another probable contributor to the water supply. We have seen scores of wells located in the barnyard, so as to be convenient for watering the stock, and used for culinary purposes as well, if not in any other way, in the form of milk, beef, pork, or mutton.

Some one may imagine that this picture is highly colored; but the experienced sanitarian will certainly say we have not told half the truth. If our eyes were possessed of microscopic power, we should see about us in many of the houses we visit—perhaps in the very ones in which we reside—a spectacle more surprising than that which met the gaze of the man of old whose eyes were opened for a moment, enabling him to see a mountain covered with armed hosts who were invisible to his natural eyes. But the hosts we should see would not be an army of brave soldiers coming to our rescue from disease, but the emissaries of death in countless numbers, intent upon our destruction, ready to pounce down upon us at the first favorable opportunity, to rack us with pain, and finally devour us.

Disposal of Germ-Breeding Matter.—But we must now come to the practical question, What shall be done with this decomposing matter? Its constant occurrence is unavoidable, but we can so dispose of it as to avoid the dangers which have no more than been hinted at in this connection.

Cellars under a house are rather prejudicial to health, even at best. As they are commonly used, they are very greatly so. If there must be a cellar beneath the house, it should be large, light, and well ventilated. Every week, at least, the cellar windows should be opened wide, to allow free change of air. A good way to ventilate a cellar is to extend from it a pipe to the kitchen chimney. The draft in the chimney will carry away the gases which would otherwise find their way into the rooms above.

Cellars should be kept clear of decaying vegetables, wood, wet coal, and mold. The walls should be frequently whitewashed, or washed with a strong solution of copperas. The importance of some of these simple measures cannot well be over-estimated.

Houses should be built so high above the ground that the space beneath can be easily cleared every few months.

Cesspools.—How to avoid contamination of the air in our homes from drains, sewers, and cesspools should be a question of vital interest.



How shall this evil be corrected? In cities the problem is a difficult one, unless sewers can be replaced by the dry-earth system. In the country, and in small towns, it is easily remedied thus:—

Make the cesspool some little distance from the house. Place in communication with it a wooden ventilating flue sixteen or eighteen feet in height, and four to six inches square inside. This will carry off the foul gases under ordinary circumstances, but it will sometimes be found inefficient; hence a water-trap should be formed in the drainpipe, just beneath the sink, by bending the pipe so that it will constantly retain three or four inches of water.

A still better way is to connect the drainpipe with the chimney or stovepipe, by means of a pipe of suitable size. This will secure ventilation of the drain; and if the connecting pipe joins the drainpipe just beneath the sink, the protection will be perfect. All joints should be air-tight, and the outlet from the sink should be plugged tightly when there is no fire in stoves communicating with the chimney.

Another valuable precaution is this: Pour into the sink, two or three times a week, a gallon of water in which two pounds of copperas have been dissolved. A few crystals of copperas kept constantly in the sink could do no harm. Copperas is very cheap when bought by the quantity.

A new cesspool should be made at least once a year, or the old one should be thoroughly cleaned.

Bedrooms, Beds, and Bedding. — Never sleep in a room which has been unused for weeks, unaired, unwarmed, and secluded from sunlight, at least until the bedding has been thoroughly aired and dried, and the air of the room thoroughly changed by ventilation. Never offer such a room for the accommodation of a guest without treating it in the same way.

The bed-clothing should be dry and warm. A cold bed is necessarily a damp bed, as it condenses moisture from the body of the sleeper as well as from the air of the room. A damp bedroom becomes musty. Thus a person sleeping in such a bed is not only debilitated by the loss of animal heat, but is poisoned by the inhalation of the musty, germ-laden air which he is compelled to breathe during at least a third of the twenty-four hours. A sleeping-room should always contain a stove, unless heated by a furnace or from an adjoining and communicating room. The bedroom should not be too warm, but should be heated sufficiently to insure dryness.

Bed-clothing and mattresses should be thoroughly aired daily, and should be exposed to the direct rays of the sun whenever possible. The Italian custom of leaving the bedding exposed to



the air during the entire day is a good one. By this means the excretions accumulated from the body during the night are mostly removed.

Bed-clothing should be of porous material; otherwise the skin cannot breathe any more than could the lungs with a rubber blanket thrown over the head and gathered tightly about the neck. Porous coverings also allow the escape of the greater portion of the moisture excreted by the skin, which amounts to not less than half a pint to a pint during the night. Several thin coverings are much better than one or two heavy comfortables. Woolen blankets are most suitable, being both light and warm as well as porous.

Feather-beds are very unhealthful. They not only undergo a slow decomposition themselves, thus evolving foul and poisonous gases, but they absorb the fetid exhalations from the body which are thrown off during sleep. By constant absorption, the accumulation soon becomes very great, and the feather-bed becomes a hotbed of disease. Hair, cotton, straw, or husk mattresses are greatly superior to feathers from the standpoint of health.

Do n't cling to the old feather-bed because it is an heirloom. The older it is, the worse it is. Only think of the amount of disease germs which must be stowed away in a sack of feathers which has done service during a hundred years

or more ! Subject to all the accidents and emergencies of domestic life, it has, perhaps, carried a half-dozen patients through typhoid fever, and pillowed the last months of the gradual dissolution of a consumptive, besides being in constant use the balance of the time.

Outhouses.—Deep vaults under an outhouse should never be tolerated under any circumstances. The best way to manage a privy is this : Early in the spring fill up the old vault, if there is one, even with the surface. Raise the building a little. Have made at the tin-shop a sufficient number of pans of thick sheet iron. The pans should be about two feet square, and two and a half inches deep. Each should be furnished with a long bail, and a strong handle at one side about a foot in length. In using these pans, fill each half full of fine, dry dirt—not sand—or ashes, and shove it into position, allowing the bail to fall back upon the handle behind. By the addition of a little dry dirt several times a day, all foul odors will be prevented. The contents of the pans ought to be removed every night in the warmest weather of summer, the pans being replaced with a fresh supply of dry earth. During cooler weather, if little used, the pans will require emptying but once a week, if they are kept well supplied with dry earth. The contents of the pans may be buried, or



removed to a proper place at a distance from any dwelling.

For convenience, it is found to be an excellent plan to hire a scavenger to attend to the pans at regular, stated times. Fifteen or twenty in a community can unite on the same plan, and thus make the expense very slight for each.

About the first of December, the pans may be removed and a shallow vault dug. The vault should not exceed two feet in depth, and it should not be tightly inclosed. This will allow the contents of the vault to freeze. They may be removed several times during the winter, and should be kept covered with dry dirt, which should be procured in sufficient quantity in the fall.

To Destroy Foul Odors.—Abundance of fresh air is the best deodorizer. There is no substitute for ventilation. Pure air washes away foul smells as water washes away dirt. One removes material filth, the other gaseous filth. If the offensive body is movable, be sure to remove it. If not, apply something to destroy it. Several agents will effect this.

If it can be safely done, set fire to the foul mass; or, if this is undesirable, heat it almost to the burning point.

Apply very dry, finely pulverized earth. Clay is the best material. Finely powdered charcoal

which has been freshly burned, is quite as good as earth. Dry coal or wood ashes are most excellent for disinfecting purposes.

Make a solution of permanganate of potash, dissolving one ounce in a gallon of water. Add this to the offensive solid or fluid until it is colored like the solution. This is an excellent deodorizer. It is needed in every household. A supply of the solution should be kept constantly on hand ready for use.

Copperas, dissolved in water, in proportion of two pounds to the gallon, is cheaper, and may be used when large quantities are needed. Apply it freely.

Chlorine gas, chloride of lime, ozone, and numerous other agents, are effective when rightly used.

Barnyards.—The close proximity of barnyards, hencoops, and hogpens to human dwellings is a frequent cause of serious and fatal disease. The germs which are developed in the filth abounding in those places, together with the noxious gases constantly arising from the decomposing excreta, are productive of disease when received into the system. Often, indeed, the well from which the family supply of water is obtained will be located only a few feet from a reeking barnyard, or as we have more than once seen, the well will, for convenience, be located within the yard itself. In consequence of the



proximity, the water of the well will be contaminated by the soluble filth which percolates down through the porous earth and finds its way into the underground veins of water by which the well is fed.

Notwithstanding all these dangers, there are people who, incredible as it may seem, still hold to the absurd idea generated in the Dark Ages, when the streets of every city were one immense reeking cess-pool, that foul smells originating in the filthy ordure of horses and cows possess some healing properties. Not long ago, when we appealed to a man to clear his barnyard, which had become a positive nuisance, being not more than a half a dozen feet from the threshold of a dwelling-house, he retorted that he had always been informed, and as he thought by good authority, that a barnyard smell was the "healthiest kind of a smell, and was especially good for consumptives." If there is such an absurd error prevalent, it ought certainly to be corrected. No foul, noxious odor can possibly be conducive to health. Barnyards should be located at least forty or fifty rods away from the dwelling, and wells should be nearly as far removed from such sources of poisoning, to insure against water contamination, which is one of the most common causes of typhoid fever.

A Backyard Prescription.—A practical

country doctor was once asked by a patient whose premises were in a sadly unsanitary condition, what would be the best disinfectant to provide for hot weather. The doctor promised a prescription, if the patient would get it filled and use it. This being agreed to, it was written out as follows:—

“Rake 1, shovel 1, wheelbarrow 1. Directions: Use vigorously every twenty-four hours until relieved. This prescription always works well.”

House-Cleaning.—The semi-annual house-cleaning, although not a pleasant experience, is just as necessary as the original building of the house. Some important things are often overlooked in the general hurry and confusion.

The closets, garrets, clothes-rooms, stairways, and similar places need thorough renovation as well as more conspicuous rooms. The steam and gases from the kitchen find their way into all parts of the house, and are absorbed by the porous walls, or condense upon the woodwork. If not removed, they become sources of disease. The spare bedroom and the parlor must not be neglected on account of having been little used, for the same reason.

New wall paper should never be put on over old. The fresh paste, by its moisture, causes the fermentation of the old paste and the production of foul gases from the colors of the pa-



per and the impurities which have been absorbed. If the old paper contained arsenic, the danger is increased tenfold, as arseniureted hydrogen is formed, one of the most fatal gases known. House-cleaning is one of the most important parts of domestic labor, and should not be trusted wholly to ignorant servants. It should be done under the constant supervision of an intelligent and thoroughgoing person. A little neglect to examine and thoroughly cleanse every nook and corner may result in the sacrifice of a human life. Too much importance cannot be attached to the necessity of care and painstaking in this matter.

Every dwelling should be thoroughly cleansed at least twice a year. Wood-boxes should be banished from the living-room. Old carpets, with their accumulated dust, should be taken up and thoroughly beaten and cleansed, or better still, exchanged for hard-wood floors, well oiled, and covered, so far as necessary, with loose rugs, which can be removed and shaken every day. Bed-ticks should be refilled if straw is used, every bed should be carefully examined for vermin, and a general renovation should take place.

Sunshine.—In caves, mines, and other places which are excluded from the light, plants do not grow, or, at most, they attain only a sickly development. The same is true of animals. In

the deep valleys among the Alps of Switzerland, the sun shines only a few hours each day. In consequence, the inhabitants suffer terribly from scrofula and other diseases indicative of poor nutrition. The women, almost without exception, are deformed by huge goiters, which hang pendant from their necks unless suspended by a sling. A considerable portion of the males are idiots. Higher up on the sides of the mountains, the inhabitants are remarkably hardy, and are well developed, physically and mentally. The only difference in their modes of life is the greater amount of sunshine higher up the mountain side. When the poor unfortunates below are carried up the mountain, they rapidly improve.

Throw open the blinds and draw aside the window curtains. Never mind if the carpets do fade a little sooner. The pale cheeks will acquire a deeper hue, and the sallow skins will become of a more healthy color.

A sitting-room ought to be on the east or south side of a house, so that sunlight will be plentiful. House plants will not thrive in a north room. Women and children, who live mostly in the house, thrive no better in such a situation than plants. Sleeping-rooms should be aired and sunned every day.

Japanese Babies.—Dr. Small recently stated before the Royal Asiatic Association of Japan, that the mortality of Japanese babies is very



small as compared with that of American babies. He attributes this fact to the good ventilation secured by the loose construction of Japanese dwellings. These structures are generally made so light and airy, and with so many openings for the air, that although carbon fires are often used, the ventilation is very much better than that usually found in the air-tight brick or stone houses of foreigners. Certainly, this is a good testimony to the value of fresh air for babies.

Night Air.—A general prejudice exists in the world against night air. In part it is justifiable, but much of it is unfounded. There is only one kind of air in the night, and that is night air. The air in the house is night air as much as is that out-of-doors. All the air we breathe comes from the outside. If the windows and doors are shut, it crowds in through the cracks and chinks. It makes very little odds, then, whether we breathe night air in-doors, or out-of-doors, except that it is rather purer in the latter situation. In many localities, night air is purer than day air.

House Plants in Sleeping-Rooms.—The supposition that house plants are injurious in chambers and sick-rooms is a popular error. It is commonly supposed that plants draw the vitality of the patient, or poison the atmosphere in some way. This is wholly an error, if we except a few of the more strongly scented plants, which emit a somewhat poisonous odor, or which

might in some cases be unpleasant to the senses of a nervous patient. Plants cannot draw vitality from animals. Indeed, they are the one great means which make human life possible ; for if they did not purify the air, all animals would quickly perish.

Plants inhale carbon di-oxide during the day, and exhale oxygen. During the night, they inhale carbon di-oxide the same as in the daytime, but exhale a part of it again, along with the oxygen. They purify the air, then, during the night, but less than during the day.

A mouse and a growing plant can live together in an air-tight box. Alone, either one would die ; together, they both thrive. Plants also remove impurities from the air by means of the *ozone* which they produce, which is one of the most powerful disinfectants known. The laurel, hyacinth, mint, mignonette, lemon-tree, and feverfew are among the best ozone-producing flowers.

The cheerful aspect which flowers give to a room, and the pleasant recreation which their care affords, are not the least of the advantages to be derived from them.

Keep Clean.—The skin, the superficial covering of the whole body, everywhere abounds in little mouths, or openings, called pores. There are more than 2,000,000 of these openings upon the surface of the body. Each one is the exter-



nal orifice of a capillary tube which acts as a kind of sewer to convey away dead, effete, and decomposing matter from the body. Each of these purifying organs is constantly at work, unless its mouth gets obstructed in some way. They are especially active in the summer season when the weather is warm, pouring out large quantities of perspiration, in which the offensive matters are held in solution.

Now let us see what takes place if we pay no attention to the natural clothing with which we have been kindly provided. The sweat or insensible perspiration, loaded with impurities, is poured out of 2,000,000 little sewers, upon the surface of the body. The watery portion evaporates, leaving behind all the foul matter which it contained, which adheres to the skin. This is what occurs the first day. The next day an equal quantity is deposited in the same way, making, with the previous deposit, a thin film of dirt covering the skin. The third day the quantity has augmented to the consistency of varnish. The fourth day the person becomes completely encased in a quadruple layer of organic filth. By the fifth day, fermentation begins, and an unsavory and pungent odor is developed. The sixth day adds new material to the accumulating pollution, and still further increases the intensity of the escaping effluvia. Upon the seventh day a climax of dirtiness is reached. The penetrat-



ing, pungent feter becomes intolerable. The person feels as though he had been bathed in mucilage or molasses. When he approaches his more cleanly friends, they look around to see if there is not some fragment of carrion adhering to his boot. But the individual himself is unconscious of any unpleasant odor, his nose having become accustomed to the stench ; or if he recognizes it, he flatters himself that as no one can *see* the condition of his cuticle, he will escape detection. Vain delusion. Every person whose organ of smell is not wholly obliterated by snuff or catarrh, will single him out as quickly as a dog detects the exact locality of a weasel.

In the winter, one or two general baths each week will usually be sufficient to keep a person decently clean. But during the hot weeks of summer, a daily bath is indispensable. Two or three times a week, plenty of soap and water should be employed. On other days, a light sponge or towel bath will answer. A large quantity of water is not always absolutely necessary. A person can take a very refreshing and useful bath with a soft sponge and a pint of water. Such a bath can be taken anywhere without the slightest danger of soiling even the finest carpet. A simple air bath is better than none.

Cold bathing is not to be recommended.



Robust persons may stand it very well, but it is injurious to invalids, and to any one, if long continued. The best temperature for most persons is about blood heat.

Are not baths weakening? The weakening effect of a simple application of a little water to the surface of the body, is not one tenth as great as that from carrying about constantly a load of dirt upon the skin which not only prevents the elimination of impurities from the blood, but is actually absorbed into the system again. A bath is refreshing, soothing, and strengthening, if properly taken.

Poisonous Paper.—Many cases of poisoning, some of which were fatal, have been traced to the arsenic contained in several of the colors of wall paper. The most dangerous color is green. It is almost impossible to find a green paper which does not contain arsenic. Green window curtains are especially dangerous. The green dust which can be rubbed off from them is deadly poison. In rolling and unrolling the curtain it is thrown into the air, and is breathed. The same poison is brushed off the surface of arsenical wall paper into the air, by the rubbing of pictures, garments, etc., which come in contact with it.

It is very easy to test papers of this kind before buying, and it would be wise always to take this precaution. Take a piece of the paper,

hold it over a saucer, and pour upon it strong aqua ammonia. If there is any arsenic present, this will dissolve it. Collect the liquid in a vial or tube, and drop in a crystal of nitrate of silver. If there is arsenic present, little yellow crystals will make their appearance about the nitrate of silver. Arsenical green, when washed with aqua ammonia, either changes to blue, or fades.

Poisonous Aniline Colors. — Red-flannel stockings, bright hat linings, and the striped stockings which have been so fashionable, have occasioned serious poisoning in numerous cases. The aniline dyes with which they are colored are used in connection with arsenic, which is not wholly removed by the manufacturers.

Hair Dyes and Cosmetics.—Any number of "Hair Dyes," "Hair Vigors," "Hair Renewers," "Hair Tonics," and various other compounds for application to the hair with the object of restoring its color or promoting its growth, have been invented during the last ten years. Many of these mixtures claim to be purely vegetable, and harmless. This is untrue of any of them. They contain, almost without exception, a very large amount of mineral poison. Lead, silver, and sulphur are the most common ingredients. The effects of applying such articles to the head are very serious. A few of the more prominent results are headache, vertigo, irritation of the scalp, apoplexy, con-



gestion of the brain, nervousness, sleeplessness, paralysis, and insanity. Numerous instances of all these maladies have occurred as the result of using "hair dyes."

Gray hair is no disgrace. The healthful growth of the hair can be promoted by daily friction with the ends of the fingers wet in cool soft water better than by any nostrum.

Cosmetics are equally dangerous. We have seen hopeless paralysis of the extensor muscles of the forearm, causing wrist-drop, produced by the use of paints for the complexion. Young ladies have destroyed their usefulness for life by this foolish practice. Lead colic is another result of the use of paints, many of which contain lead. Beware of them.

Hygiene of the Eyes.—These, the most delicate of the organs of sense, are often ruined by abuse. With good usage they will "last a lifetime." It is necessary to observe the following rules, to preserve the health of the eyes:—

1. Never use the eyes when they are tired or painful, nor with an insufficient or dazzling light. Lamps should be shaded.

2. The light should fall upon the object viewed from over the left shoulder, if possible; it should never come from in front.

3. The room should be moderately cool, and the feet should be warm. There should be nothing tight about the neck.

4. Hold the object squarely before the eyes, and at just the proper distance. Holding it too near produces near-sightedness. Fifteen inches is the usual distance.

5. Never read on the cars, nor when riding in a wagon or street-car, nor when lying down. Serious disease is produced by these practices.

6. Do not use the eyes for any delicate work, reading or writing, by candlelight, before breakfast.

7. Avoid using the eyes in reading when just recovering from illness.

8. Rest the eyes at short intervals when severely taxing them, exercising the lungs vigorously at the same time.

9. Never play tricks with the eyes, as squinting or rolling them.

10. If the eyes are near-sighted or far-sighted, procure proper glasses at once. If common print must be held nearer than fifteen inches to the eye for distinct vision, the person is near-sighted. If it is required to be held two or three feet from the eye for clear sight, the person is far-sighted.

11. A near-sighted person should not read with the glasses which enable him to see distant objects clearly.

12. Colored glasses (blue are the best) may be worn when the eye is pained by snow or sun-



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light, or by a dazzling fire or lamplight. Avoid their continued use.

13. Never patronize traveling venders of spectacles.

Tight-Laced Fissure of the Liver.—We once found, in Bellevue Hospital, New York City, a woman who was suffering under a complication of maladies which evidently had their origin in the foolish practice of tight lacing, to which she had been addicted. On making an examination of the internal organs, we were amazed to find the liver presenting itself just above the hip bone, its normal position being entirely above the lower border of the ribs. Further examination revealed the fact that in about the middle of the organ there was a constriction, or fissure, nearly dividing it in two, which had been produced by habitual lacing. The function of the organ had been so greatly interfered with that it had failed to remove the biliary elements from the blood, and they had been largely deposited in the skin, making the latter anything but beautiful, although the woman was not advanced in years, and was naturally fair. Thousands of young ladies have cut their livers nearly in two in the same way. No wonder that they require rouge and French chalk to hide their tawny complexions.

Squeezed to Death.—Not long ago, a young

lady went to bed without removing her corset, as she wished to grow small. When morning came, her friends found her a corpse. Thousands of young ladies are killing themselves in this way. They may not die as suddenly, but they are dying as surely.

If any young lady who wears a corset could see the terrible havoc which it makes among her internal organs, she would be ready to desist from so foolish and harmful a practice. If the opportunity were afforded her, she would see her stomach squeezed out of shape and position so as to resemble a dog's much more than a human stomach. She would find her lungs compressed so that the blood could circulate with freedom through only a small portion, while the heart must struggle to its utmost to secure even a partial circulation. The large and small intestines she would find all jammed down into a heap in the lower part of the abdomen, where they do not belong, crowding upon the most delicate organs of her whole body, displacing and otherwise injuring them.

Any young woman who can deliberately commit all of these assaults against her physical frame while knowing the consequences, is guilty of a crime differing from that of suicide only in degree.

Thin Shoes.—Illy-clad feet are not infrequently the cause of very serious disease. A



tight shoe prevents the proper circulation of the blood in the foot, causing it to become cold. If the shoe or boot is thin, the foot is still further chilled, and the blood which circulates with difficulty through it is sent back to the internal organs with a temperature much below that required for health. Exposure to cold causes the blood-vessels to so contract that less blood can circulate through them. Thus one evil creates another. Thin soles, being insufficient protection against wet, allow the moisture of damp walks to reach the feet, making them wet as well as cold. When the extremities are chilled, the internal organs and the brain become congested, too great a quantity of blood being crowded into them. This is the chief origin of the headaches from which schoolgirls suffer so much, but which are usually attributed to study.

Keep Warm.—Fashionable dress totally disregards every consideration but novelty and display. Fashion loads the shoulders and chests of ladies and girls with warm shawls, cloaks, and furs, surrounds the abdomen with from ten to fourteen thicknesses of cloth, and imprisons the hands in a warm fur muff, but leaves the limbs and ankles exposed to chilling blasts, almost without protection, while they actually need more clothing than any other part of the body.

The whole body should be clad in soft flannel from neck to wrists and ankles nearly the year

round. It is better to have the underclothing for the upper part of the body and that for the limbs combined in one garment. If arranged in two garments, they should only meet, and not overlap, as this gives too much additional heat over the abdominal organs. A woman's limbs require as many thicknesses of covering as do a man's, and a garment which fits the limb closely will afford four times the protection given by a loose skirt. Thick shoes or boots with high tops, and heavy woolen stockings which are drawn up outside the undergarments clothing the limbs, complete the provision for warmth. Leggings should be worn in cold weather.

Improper Eating.—Sir John Hawkshaw, of England, declares that railroad traveling is safer than eating, since, in England, more persons annually lose their lives as the result of choking themselves through hasty eating than from railroad accidents. If to this number we should add those who lay the foundation for chronic disease by improper eating, the disproportion in favor of the railroads, which kill only one passenger for every four millions of miles of travel, would be vastly increased.

The Pepsin Mania.—One of the greatest physical needs of the present age, at least in this country, is good digestion. The lack of digestive ability has created almost a mania for swallowing artificial digestive agents of every



description. Pepsins of varied origin and in various combinations, peptones, peptonoids, and every possible preparation for digestive promotion, are manufactured and sold in prodigious quantities, to satisfy the almost universal demand for something to aid digestion. An eminent French physician, M. Georges, has made examinations of the gastric juice in one hundred and forty-two cases of indigestion, and has never found pepsin deficient in a single case. In sixteen cases, patients were made worse by the use of pepsin. Recent researches show that in cases of indigestion, if accompanied by pain, the difficulty is usually a deficiency of the natural acid of the gastric juice, rather than a deficiency of pepsin, which may be considered as always present in sufficient quantity, as a small amount of pepsin will digest a very large amount of albumen.

Effects of Drinking Ice-Water.—It is quite common for persons to feel faint and to become pale immediately after drinking a glass of ice-water. They attribute these effects to heat or over-exertion, or to some other cause which has nothing to do with the result, not knowing that they have so weakened the heart as to prevent its sending a due amount of blood to the lungs and brain, and that, had the water been a little colder, life would possibly have been extinguished altogether. Direct experiment with in-

struments especially devised for the purpose of measuring the force of the heart's pulsations, establishes the fact that there is no agent of the *materia medica* more powerful with some persons as a depressant of this organ than a large draft of ice-water. Under certain circumstances, it acts with all the force and rapidity of prussic acid.

Wholesale Lead Poisoning.—Dr. J. J. Putnam, of Boston, has recently published a report of an investigation as regards poisoning by lead, from which it appears that paralysis and bowel ailments are by no means the most common symptoms of lead poisoning. He finds that tremors, resembling those of paralysis agitans, and a great variety of nervous symptoms, are frequently caused by lead poisoning not sufficient in degree to produce bowel troubles or paralysis. The investigations were carried on in the city of Boston. He found lead in the urine of fifty per cent of all the cases examined. This fact exposed the fallacy of the popular notion that many waters, especially those that are a little hard, protect the pipes so perfectly that there is no danger of poisoning, even though lead pipe may be used. An investigation of the matter shows that in fifty per cent of all the cases in which lead was found, the water was obtained through lead pipes. The error has been in supposing that bowel troubles and paralysis were the chief symptoms



present in cases of poisoning by lead. It is important that all persons living in large cities where lead pipes are much used for conveying water, should be acquainted with these facts. Water which has stood for any length of time in a lead pipe, cannot be safely used.

The Cochineal Test for Lead.—One of the most convenient and delicate tests for the presence of lead in drinking-water, is the following : Dissolve one part of cochineal in one hundred parts of proof-spirit. Place two tablespoonfuls of the water to be tested in a white porcelain dish. Add ten drops of the cochineal solution. If the water is free from lead, the color will simply be a dilution of the pink tint of the cochineal ; but if it contains so small a proportion of lead as one part in 700,000, it will be a purplish pink, and if there is one part in 70,000, it will be a purplish blue.

Preventing Consumption.—Old ideas respecting the heredity of consumption are now pretty generally discarded, although it is still conceded that a tendency to the disease may be transmitted by heredity. It is now generally believed by the most experienced physicians, that consumption is almost invariably contracted by contagion. In many instances it is easy to trace the source of the disease. The following is an example :—

A Nebraska farmer in some way contracted

the disease, perhaps by eating diseased meat. In the course of his illness he was cared for by his wife, who had also to support a large family of children. The poor woman, knowing nothing of the contagiousness of the disease, and being pressed beyond endurance with her numerous cares, sometimes neglected the washing of the many cloths soiled by the sputa of her sick husband, drying them instead, and rubbing them soft between her hands. The dried sputum, with its active germs, was thus scattered in the air, and was undoubtedly inhaled ; for in a few months after the death of her husband, her own lungs showed signs of the disease, and in less than a year she was in her grave. The State Board of Health of Maine has thought this matter of sufficient importance to warrant the issuing of a circular, the greater part of which we reproduce in this connection. We wish to add one rule, which we are surprised to see omitted, viz, that kissing by a consumptive should be most emphatically interdicted. We know of no means which the consumptive could more effectively employ to inoculate his friends than kissing ; and yet it is not an uncommon thing to see consumptive fathers and mothers fondling their children in a way which exposes them to as imminent peril of life as though they were encountering a storm of rifle bullets, or a



bombardment from a thunder cloud. In view of these facts it is not remarkable, to say the least, that young children often suffer from tubercular troubles of the brain, tubercular enlargement of glands about the neck, and other tuberculous maladies. The following are the rules referred to :—

“It should be impressed upon consumptive patients, and other persons living with them, that the sputum (that which is coughed up) is dangerous, and must be properly disposed of.

“The sputum should be received in a spit-cup or spittoon containing a little water or disinfecting fluid, and must never be spit upon floors or carpets, or received in handkerchiefs.

“If occasionally it is necessary to have handkerchiefs or cloths soiled with the sputum, they should be boiled as soon as possible, and before drying.

“The spittoon should be of such shape that the sputum may easily fall into the water without soiling the sides of the vessel. For patients not able to sit up, a small spit-cup with a handle should be used. When flies are present, it should be covered.

“Spit-cups and spittoons should be emptied and cleansed often with boiling water and potash soap. When the house has a drainage system, the contents may be poured down the water-

closet or slop-hopper ; when it has not, they should be buried in ground which will not be turned up soon.

“The sputum should not be thrown out upon the surface of the ground near inhabited places, nor upon manure heaps, nor where animals may get it, nor where it may soil animal food.

“Boxes filled with sand or sawdust should not be used. Cheap wooden and pasteboard spit-cups are now on the market, one of which may be burned daily or oftener with its contents, as a convenient way of disposing of the sputa. A pocket spit-flask of small size has been devised which may be used while away from home.

“The floors, woodwork, and furniture of the rooms in which consumptive patients stay should be wiped with a damp cloth, not dusted in the usual way.

“The patient's clothing should be kept by itself, and thoroughly boiled at the washing.

“The patient should be made to understand that in neglecting these measures he is imperiling his friends, and at the same time diminishing very much his own chances of recovery, by re-infecting himself with the inhalation of his own dried and pulverized sputum.

“After a death from this disease has occurred, the patient's room, clothing, and bed should be disinfected. For this purpose, boil all bed and personal clothing, or disinfect them



when practicable in a steam disinfecter; wash furniture, woodwork, walls, and floors with carbolic acid, and thoroughly expose the rooms to light and air.

“If raw milk is used as food, especially if it is to be given to children, an assurance should be had that the cows which produce it are perfectly healthy and subjected to healthful treatment.

“When there is any doubt as to the health of the cows, the milk should be boiled before use.

“Thorough cooking will remove all danger of tuberculosis through the medium of the meat-supply.

“Tuberculous mothers, and those inclined to consumption, should never nurse their babes.”

By observing the rules which are expressed and suggested in the foregoing, the principal, if not all, danger of infection may be avoided.

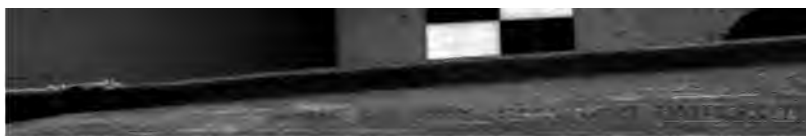
The open-air treatment of consumptives and those who are threatened with tuberculous disease, has given much better results than any other. Particularly in Germany, and to some extent in this country, such treatment has been systematized in “sanitaria” for consumptives. Here the patients have the advantages of a regular life, nutritious food, and such exercise as they can bear without fatigue; but the chief curative agent is an abundance of fresh air. Even in the coldest of winter weather, patients,

after a period of gradual habituation, and always guided by the judgment of the physician, pass the whole day walking in the open air or sitting or lying on resting-places, wrapped comfortably in blankets. Usually no claim is made for advantages of climate. An abundance of pure air is the all-important thing.

Disinfection of Cuspidors.—The Board of Health of Paris has commanded the disinfection of cuspidors used by consumptive patients. This practice ought to be universally followed. Complete disinfection may be effected by simply pouring into the cuspidor four or five times the volume of its contents of boiling water.

To Kill Germs.—Turpentine is one of the best germicides. It will destroy not only microbes, but their spores. It has the advantage over mercuric bi-chloride, in that it is not likely to be the occasion of fatal poisoning, though it must be remembered that it is highly inflammable. Its unpleasant odor will doubtless prevent its coming into general use as a disinfectant. Add one part of turpentine to four of the matter to be disinfected.

An Agreeable Disinfectant.—A sanitary journal offers the following recipe for an agreeable disinfectant, which doubtless is of some value, although we would hesitate to depend upon it as an agent for the thorough destruction of germs:



To four parts essence of rosemary, add one part each of essence of lavender and thyme, and eight parts nitric acid. Shake the bottle containing the mixture, and pour a portion of it upon a sponge and allow it to evaporate. The vapor given off is agreeable, and is doubtless, to some degree, disinfecting.

The Value of Pure Water.—Water is the most universal of solvents. The greater its purity, the greater its solvent properties; that is, the less foreign substance the water contains, the more it is capable of taking up. The tissues of the body contain many poisonous substances which must be dissolved and removed, that the body may be maintained in a state of health. At least two or three pints of water are needed daily for this purpose. If the water is impure, hard, or contains mineral substances of any sort, its value in the body as a solvent is lessened, and it may become a source of disease. The purest water is unquestionably the best, and no outlay in money for the purpose of supplying the necessities to a family or to a community, can be more wisely invested than in providing an ample supply of pure soft water. Distilled water has been found of great service in the treatment of various forms of disease, particularly diseases of the liver and the kidneys. In hard-water districts where a sufficient amount



of rain-water for a year's supply cannot be collected and properly preserved, some simple form of distilling apparatus may be employed.

Exercise.— Laziness undoubtedly kills ten persons where work kills one. The business man is worn out at forty when he ought to be in his prime, not because he has done so much work, but because he has so much neglected muscular work. Good muscles are as necessary for good brain work as they are for digging canals or building railroads. Nerve tone depends on purity of blood, which is only to be secured by a proper amount of daily exercise. Many a man has lost his health by striking an oil-well or a gas-well or some other source of sudden wealth. When he was a laboring man, and earned his bread by the sweat of his brow, he had a good appetite, good sleep, good digestion, and good spirits. Nightmares, neuralgias, and "blue devils" never trouble such a man. When he gets rich, and sits down in an office in an easy chair, rides to his place of business in a cushioned carriage, and imagines that he is enjoying life, he begins to prepare for himself a day of retribution which will surely come; and the punishment which will be visited upon him will not be for too much work, but for too little work.

Men often worry themselves into a state of disease, but mental work as well as physical



labor is in the highest degree healthful when a proper amount of muscular work is combined with it. The trouble is that the majority of mental workers seem to entertain about the same idea concerning exercise as did the Irishman in the story. While a fellow-passenger walked the deck of the ship for exercise, during a long voyage across the Atlantic, an Irishman, also a passenger, lay flat on his back, looking straight at the mast-head. When admonished that he should take some exercise, he replied, "But where's the need of exercise? Doesn't the captain say the ship is carrying us two hundred miles a day? Sure, that's exercise enough for any one."

Bed-Chamber Smothering.— During the cold season in northern latitudes, the average bed-chamber not infrequently becomes a veritable death-trap. With windows, doors, and even every crack and keyhole tightly stopped, the occupants breathe over and over again for the hundredth and thousandth time, a vitiated atmosphere laden with noxious gases and poisonous excretions to an extent little short of deadly. Indeed, a bed-chamber atmosphere such as described, is veritably death-dealing in its influence. The only wonder is that its occupants have so long survived, and that it is not more often immediately fatal in its effects. Not infrequently, the pernicious qualities of the at-

mosphere of an unventilated bed-chamber, are intensified by surrounding the bed with close curtains, so that the noxious inhalations from the bed of the sleeper are returned still more dense and potently active.

A bed-chamber should always be well ventilated. Cold air is better than poisoned air. If possible, furnish a good supply of warm, pure air for every sleeping-room. Every room in the house should be thus provided, but especially the sleeping-rooms, and the bed itself should be so placed that the sleeper will enjoy the freest possible circulation of air. Travelers on sleeping-cars, especially those occupying lower berths, are often half smothered in the little compartments in which they are confined by the partitions and heavy curtains. Some provision should be made for the ventilation of these compartments, to permit the escape of air made foul by many occupants. In the meantime, travelers would do well to secure the best air-supply the oft overheated car affords, by leaving the curtains open sufficiently to allow a circulation, be it ever so little.

William Cullen Bryant's Mode of Life.—

In the winter of 1871, while still in his prime, this eminent scholar and poet, who preserved his vigor and activity to a very advanced age,—finally dying, not from old age or disease, but from exposure,—thus described his habits of life



as regards diet, exercise, etc., in a letter to a friend : —

“I rise early, at this time of the year about 5 : 30 ; in summer, half an hour or even an hour earlier. Immediately, with little incumbrance of clothing, I begin a series of exercises, for the most part designed to expand the chest and at the same time call into action all the muscles and articulations of the body. These are performed with dumb-bells, the very lightest, covered with flannel, with a pole, a horizontal bar, and a light chair swung around my head. After a full hour, and sometimes more, passed in this manner, I bathe from head to foot. When at my place in the country, I sometimes shorten my exercise in the chamber, and, going out, occupy myself for half an hour or more in some work which requires brisk exercise. After my bath, if breakfast is not ready, I sit down to my studies till I am called. My breakfast is a simple one,—hominy and milk, or in place of hominy, brown bread, or oatmeal, or wheaten grits, and in the season baked sweet apples. Animal food I never take at breakfast. Tea and coffee I never touch at any time. Sometimes I take a cup of chocolate, which has no narcotic effect, and agrees with me very well. At breakfast, I often take fruit, either in its natural state or freshly stewed. After breakfast, I occupy myself for a while with my studies, and then, when

in town, I walk down to the office of the *Evening Post*, nearly three miles distant, and after about three hours, return, always walking, whatever be the weather or the state of the streets. In the country, I am engaged in my literary tasks till a feeling of weariness drives me out into the open air, and I go upon my farm or into the garden, and prune the fruit-trees or perform such other work about them as they need, and then go back to my books. I do not often drive out, preferring to walk.

“In the country I dine early, and it is only at that meal that I take either meat or fish, and of these but a moderate quantity, making my dinner mostly of vegetables. At the meal which is called tea, I take only a little bread and butter, with fruit, if it be on the table. In town, where I dine later, I make but two meals a day. Fruit makes a considerable part of my diet. My drink is water. I am a natural temperance man, finding myself rather confused than exhilarated by wine. I never meddle with tobacco, except to quarrel with its use. That I may rise early, I of course go to bed early; in town, as early as ten; in the country, somewhat earlier. For many years I have avoided, in the evening, every kind of literary occupation which tasks the faculties, such as composition, even to the writing of letters, for the reason that it excites the nervous system and prevents sound sleep.



“My brother told me not long since that he had seen in a Chicago newspaper, and several other Western journals, a paragraph in which it was said that I am in the habit of taking quinine as a stimulant, that I have depended on the excitement it produces in writing my verses, and that in consequence of using it in that way I had become deaf as a post. As to my deafness, you know that to be false, and the rest of the story is equally so. I abominate all drugs and narcotics, and have always carefully avoided everything which spurs nature to exertions which it would not otherwise make. Even with my food I do not take the usual condiments, such as pepper and the like.”

Vegetarian Athletes.—The bodyguard of the late Emperor William was made up of men of great physical powers, averaging in height from six to six and one half feet. These men were natives of a mountainous district in Germany in which little or no meat is used as an article of diet.

Clothing for Children.—Much is said in these days concerning the rights of children, but there is certainly no right to which every child is more surely entitled than that of perfect physical health. It should be one of the first considerations of every mother to secure such conditions for her children as will insure them sound bodies and good health, not only

because health will bring them the greatest range of comfort, but because it is the means through which the highest and best possibilities of life are attained. It is a well-established fact that proper clothing is one of the basic factors in the promotion of health, not only in adult life, but through all the years from childhood up; in fact, at no time in life is there greater need of care respecting the proper clothing of the body, than during the period of growth and development. Childhood is the time to establish the foundation for future health and strength; for in matters pertaining to health, as well as in those of mental growth, the principle holds true that "the farther back we begin, the more momentum we gain." Many mothers are slow to recognize this fact, and while they often dress themselves so as to secure warmth and ease, their little ones are made to suffer from the injurious constraint of such clothing as will make the tiny creatures appear the more charming and dainty, regardless of health and comfort.

One of the first requirements of healthful clothing is that it allow unrestrained action of every organ of the body. This is absolutely essential for perfect development, so long as the body is undergoing the process of growth. We believe that mothers often unwittingly violate this principle in the dressing of their children,



by compelling them to wear clothing which they have partially outgrown, but which is not sufficiently worn to be discarded. Tight sleeves, tight bands, tight waists, etc., which have become such from the child's increased size, are certainly quite as harmful as those purposely so constructed; and added to this is the fact that the bones and muscles of the tender little ones are far more susceptible to the constriction of tight clothing than are those of persons of older growth.

The clothing of children should always be so made that it can readily be enlarged to accommodate the growing form, and should never fit so snugly as not to allow perfect freedom of movement to every organ. Whatever garments are worn about the chest and waist should always permit of an unrestrained, full inspiration, and it would be an excellent plan if the mother would frequently test the child's breathing capacity, by placing a tape-measure around its waist when in its night-clothing, and allowing it to take a full inspiration, noting the number of inches expansion, and then adjust the clothing to correspond with the measure of the full inspiration, allowing an inch or two more for growth.

Careful attention should also be paid that neither through misfit or shrinkage the little one's under-garments are so short as to come

above the ankle. The sleeves, too, should reach to the wrist. Any one who has experienced the chilling sensation occasioned by wearing even for a few hours a garment the sleeves of which were shorter than those habitually worn, will at once realize that serious colds are likely to result from the wearing of under-garments with shrunken or outgrown sleeves. Seemingly little things, you say, and yet because they are so small they are the more often overlooked. There are few growing children that do not need their flannels lengthened once or more during a season, to make them serve the true purpose of healthful clothing. Let mothers also exercise great care in the washing of the children's flannel under-garments, to prevent unnecessary shrinkage ; for who can doubt that many a croup and cold has resulted from the change from one garment to another shrunken through careless washing until it was several inches shorter than the one removed ?

Another essential qualification of healthful clothing is equable warmth for all portions of the body. Although much has been written on this subject, and the number of sensible mothers who give this matter attention is far greater than formerly, there are still many thousands of little ones who might be saved from early death if warmly and equably clad. As has been often said, the material best fitted as a first covering



for the body, is some fabric of wool, which should be worn throughout the year, being of lighter or heavier material, in accordance with the degree of external cold.

Many mothers provide their little ones with some form of flannel under-garments, and then consider that because the proper kind of material has been supplied, the child is healthfully clothed. The fact that a garment is of flannel, is no proof that it meets the just-quoted requirement of healthful dress. In perhaps the majority of cases, these garments are vest and drawers which overlap each other about the central portion of the body, making a double thickness of covering over that region which least needs it, because it contains the vital organs, and is thus much less liable to suffer from cold ; while the limbs and arms, which need warmer covering because farther away from the source of bodily heat, have but one thickness, and that often so abridged in length as to reach but little below the elbows and knees, leaving a space between it and the tops of the child's shoes only covered by the stocking, which if of ordinary merino or cashmere, is but little warmer than cotton, although it answers to the name of woolen. The fierce winds of autumn and winter chill the little feet and limbs quite as quickly through this less-protected space as though the entire limbs were exposed.

If children's garments are purchased in two pieces, they should be combined into one by cutting the vest off at the bottom and joining it to the drawers in some careful manner. This necessitates so much remodeling that unless one can purchase suitable combination suits ready made, it is preferable to buy the material and make the garments.

When children are taken for a walk or allowed to play out-of-doors, provide equal protection for all parts of the body. Without doubt many a serious illness has resulted from muffling the little one's throat in furs while allowing its limbs to go with no more covering than was customarily worn indoors. The open space about the throat between the hood and cloak should always be protected, but it should not be overheated by an excess of wrappings. Whatever degree of warmth is required for comfort for any portion of the body, is necessary for other parts as well, and children's outdoor garments should be such as will secure an equal additional increase of warmth to the entire body, proportionate to the severity of the weather.

The foot covering of the little ones should likewise be carefully looked to in this connection. Much suffering is entailed upon children by cramping their little feet into shoes too small or too narrow for them ; and cold feet are not infrequently the result of having the shoes but-



toned tightly about the ankles, under the mistaken notion that the ankles are really supported by being thus tightly incased in leather. Children's shoes when purchased, if not already sufficiently loose, should have the buttons set forward until the finger can be easily inserted the entire length between the shoe and stocking. Nature has provided the ankle with sufficient support, in ordinary cases, and a tightly laced or buttoned shoe not only does not aid nature in supporting the ankle, but actually weakens the muscles and impedes the circulation, the same as does a tight ligature around any other portion of the body. High heels on children's shoes should never be tolerated, and, indeed, raised heels of any height are objectionable, and wholly avoidable, since shoes with spring heels can be obtained in children's and misses' sizes, of nearly all dealers.

Harmful Restrictions of Dress.—A muscle tied up is rendered as helpless as though it were paralyzed. When a muscle acts, it does so by swelling out in thickness, while contracting in length. From this it will be evident that if a tight band is put around a muscle in such a manner as to prevent its expansion or increase in thickness, it cannot possibly act. Hence, a fundamental requisite of healthful muscular action is entire freedom from restraint. Freedom of movement is indispensable to complete ac-

tion and perfect development. When a broken arm is done up in a splint for a few weeks, upon removing the bandage it is usually found that the arm has shrunk in size ; the muscles have wasted, partly in consequence of pressure, and partly on account of their enforced inaction.

The very same thing happens whenever pressure is brought to bear upon the muscular tissues. A ring worn upon a finger causes atrophy, or wasting of the tissues beneath it. By placing an elastic band around soft tissues they may be absorbed altogether, in consequence of the pressure. This action has been taken advantage of for the removal of tumors in certain parts of the body.

The elastic bands worn about the leg to keep the stocking in place, and sometimes used upon the arm to hold the sleeve up, are more harmful than is usually imagined. The long stockings worn by females bring the elastic just above the knee, where the large blood-vessels of the limb come near the surface and are in position to be compressed against the thigh-bone in such a way as to impede the circulation. It is not to be wondered at that under these circumstances, in addition to the evil of thin stockings and thin, tight shoes, there should seem to be a necessity for artificial calves, which we are informed on creditable authority have actually been employed.



Whether garters are elastic or inelastic, the effect is essentially the same. They interfere with the circulation of the blood in the lower limbs, and often produce varicose veins. Cold feet and headache are the ordinary results of their use. Schoolgirls suffer greatly from their injurious effects.

Heavy Skirts. — Those heavy skirts, varying in number from three to seven or more, all suspended from the waist, and pulling down upon the hips, are enough to drag the life out of a Hercules. A strong man would not endure for a single day one tenth of the discomfort which a fashionable woman suffers every day of her life. It is useless for woman to think of rising above her present level while she is bound down by the burdens imposed by heavy, trailing skirts.

The unnecessary and injurious weight occasioned by superfluous length and number of skirts, is greatly increased by the addition upon the outer garment of an indefinite number of flounces, folds, heavy overskirts, and various other useless accessories.

But the evils and inconveniences above referred to are not the worst which result from the wearing of so great a weight of clothing as is customary among fashionable people. The most serious consequences are those which are suffered by the delicate internal organs. The many heavy skirts and under-garments which are hung

about the waist with no support from above, drag down the organs of the abdomen, and after a time the slender ligaments which hold them in place give way, and various kinds of displacements and other derangements occur. The tightness with which the garments are drawn at the waist greatly increases the injury.

The custom of wearing the pantaloons buttoned tightly at the top, and sustained by the hips, produced so much disease even among the hardy soldiers of the Russian army, that a law was enacted making the wearing of suspenders compulsory. If strong men suffer thus, how much greater must be the injury to frail, delicate women! The constant pressure and unnatural heat to which the lower part of the back is subjected, is one of the chief causes of the frequency of kidney diseases among women. Here is found the source of "weak back," lumbago, pain in the side, and several other diseases of the trunk which affect so many thousands of American women.



FOODS.

MAN is made of what he eats. Good food and drink make good blood ; and good blood is manufactured into healthy brains and strong bones and muscles. Poor food and improper drinks make poor and foul blood, which, in turn, is made into equally poor brains, bones, and muscles.

Those who pay no attention to the character of their food, but hurry into their stomachs, indiscriminately, that which is good, bad, and indifferent, are sooner or later admonished by disease and suffering that the way of the transgressor is hard, and that nature's laws are inexorable. America is known abroad as a nation of dyspeptics. This unfortunate condition is the result of the universal disregard of dietetic rules for which our countrymen are notorious. Attention to a few plain principles would save many thousands of lives annually. A large number of the most fatal acute diseases have their chief cause in errors of diet.

Poor Food.—Impoverished food is that which does not contain all the elements of which the body is built up, in proper proportion. Perhaps

the poorest article of food in common use in this country is fine-flour bread. The miller removes the very best and most nutritious portion of the wheat by the process of bolting ; for the gluten, which nourishes brain and muscle, is deposited around the outside of the grain, just beneath the horny covering, or bran. In the center of the grain is found almost nothing but pure starch, which is so incapable of sustaining life that even a dog will starve to death in a short time if fed upon it exclusively.

Of such material nearly all American bread is made. Most other nations are wiser in this respect than we. The sturdy German eats his black bread made of the whole grain, with a keen appetite, and it makes his muscles firm and his sinews strong in spite of the pernicious influence of his favorite lager beer. Whole-wheat or graham bread is incomparably sweeter, richer, cheaper, and healthier than that made of superfine, bolted, impoverished flour.

Eccentricities in Diet. — It is sometimes useful for those who imagine that the appetite is always a safe guide in matters of dietetics, to consider the subject from the practical standpoint of a study of the dietary of different nationalities. A traveler has taken pains to gather the following illustrations of the differences in taste manifested by different nations : —

“The preference of the Chinese for food that



seems to our appetites absolutely disgusting, is well known. In Canton, rats sell for fifty cents a dozen, and dog's hind quarters command a higher price than lamb or mutton. Fancy eating birds'-nests worth thirty dollars a pound! This is what a mandarin revels in. The French have beguiled us into eating frogs' legs, which were once tabooed in this country, and we have even come to esteem diseased goose liver, in the form of *pate de foie gras*. The writer has met Brazilians who rave over boa-constrictor steaks, and count monkeys and parrots a very good meal. In the West Indies, baked snake is a common dish, as the reptiles abound, and it is a good way of getting rid of them. But when it comes to frying palm-worms in fat, one would think the stomach would rebel. It is not so, however, though by a strange inconsistency, stewed rabbit is looked upon with disgust. On the Pacific Coast the Digger Indians eat dried locusts, and in the Argentine Republic, skunk flesh is a dainty. Our own favorite bivalve, the oyster, is very disgusting to a Turk, while the devil-fish, eaten in Corsica, is equally so to us. We cannot understand, either, how the inhabitants of the West Indies and the Pacific Coast can eat lizard's eggs with a relish; still less, how the eggs of the turtle and alligator can become a favorite article of diet. The Brazilians eat ants, probably to get rid of them, for they

literally infest the country, and are of an enormous size. It is easy to pick up a handful of ants almost anywhere, though the wary do not go about it in this way, as the pestiferous insects bite in a most vicious manner. A curry of ants' eggs is a great delicacy in Siam, and the Cingalese eat the bees whose honey they have stolen. The Chinese, who seem to have stomachs like the ostrich, eat the chrysalis of the silk-worm, after unwinding the cocoon. Spiders are used in New Caledonia as a kind of dessert, while caterpillars are also relished by the African bushmen."

Effect of Diet on the Liver.—Almost every other man we meet is complaining about his liver. One has a "torpid" liver; another has "congestion" of the liver; another has a pain in his side which he is confident is due to disturbance of his liver. Complaints are loud and general against the liver, but no one thinks of entering a complaint against the diet, which is the real source of difficulty. Careful investigation and examination of the liver, after death, have proven the deleterious effect which certain articles of food have upon this organ.

Condiments.—Every day a hundred thousand dyspeptics sigh and groan in consequence of condiments. Pepper, spice, salt, vinegar, mustard, and all kinds of fats belong to the list of dyspepsia-producing articles known as condi-



ments. All the works on diet define a condiment as an article which adds nothing to the real nutritive value of food. It is simply something which is added to make food taste better. Whether the food does taste better or not does not depend upon the condiment, but upon the taste of the eater. If his taste is unperverted, he likes food best without condiments. If his taste is perverted, he may like almost any kind of unnatural combination. A Frenchman is as fond of *asafetida* in his food as an American is of salt, or an East Indian of curry powder.

Condiments are innutritious and irritating. They induce a heated condition of the system which is very unfavorable to health. They clog the liver, imposing upon it a great addition to its rightful task. Worst of all, they irritate the digestive organs, impairing their tone and deranging their function. A little practice soon accustoms a person to the disuse of condiments, and he learns to relish his food better without than with them.

Spices.—The almost universal fondness for spices is a curious illustration of the readiness with which the simplicity of the natural taste may become depraved. Pepper was used before 400 B. C. Pliny speaks of its use in his day, and expresses his astonishment that men should esteem it so highly when it has not a sweet taste, nor attractive appearance, nor any other

desirable quality. We can heartily sympathize with Pliny in his astonishment.

Nutmegs and mace are quite extensively used as spices in this country and in Europe ; but neither one is ever used as a condiment in the country from which they were first brought, the Isles of Banda.

Facts about Salt.—It is a general supposition that salt is indispensable as an article of diet. Many people suppose that life cannot be sustained without it ; nevertheless there are numerous facts which indicate that this popular supposition is erroneous. The following are a few of the many that might be presented :—

1. *Salt is a mineral.* It is a well-established fact that animal life cannot be sustained by the use of inorganic or mineral substances as food. Plants subsist upon inorganic matter, while animals require organized matter for their food.

2. *Salt is an irritant,* and when taken into the system it produces irritating effects. This is indicated by dryness of the throat and acceleration of the pulse.

3. *When taken into the system it is not used,* being expelled, unchanged, by the liver, kidneys, skin, and other depurating organs.

4. *It is an antiseptic,* and when taken in any considerable quantities greatly interferes with digestion.

5. *It is not necessary to support animal life,*



as shown by the fact that its use is confined to a very small minority of the animal kingdom.

6. *It is not necessary to sustain human life,* as is conclusively shown by several facts: (1.) Scores of persons who have been accustomed to its use have wholly discarded it, not only without detriment to their health, but with positive improvement. (2.) Millions of human beings in Central and Southern Africa, in South America, in some portions of North America, in Siberia, and in other parts of the world, subsist entirely without salt. (3.) This is not altogether because salt cannot be obtained; for in Southern Africa, where salt abounds, neither human beings nor lower animals make any use of it whatever.

We would not recommend that salt should be wholly discarded in all cases; but there can be no doubt that many cases of disease of the stomach and liver originate in the excessive use of salt. Persons suffering with torpid livers will find great benefit by abstaining almost wholly from its use, together with that of other condiments.

A gentleman who has just returned from a visit to England states that many of the English stock-raisers who are noted for producing the finest cattle in the world, never think of feeding their cattle salt, as is so commonly practiced in this country.

Tea and Coffee.—One of the most common causes of dyspepsia, "liver complaint," and nervousness, is the use of tea and coffee. The injury resulting from the use of these beverages is attributable to several evils.

1. The active principle of both tea and coffee is theine, or caffeine, a narcotic poison, which is fatal in other than small doses. Although not fatal in small doses, it produces, nevertheless, a decidedly injurious effect. The full injury is not seen at once, neither does it appear in a few months; but the integrity of the digestive and nervous systems is steadily, though slowly, undermined. Chocolate and cocoa occasion precisely the same effects, though they are less powerful.

2. The tannin contained in an infusion of tea or coffee disturbs digestion by rendering inert the gastric juice, one of the most essential digestive agents.

Hundreds have found a cure for dyspepsia, sick-headache, nervousness, and wakefulness at night, in discarding tea and coffee and all their substitutes.

Tea-Eaters.—That tea belongs to that select class of substances commonly known as "vice drugs," conspicuous examples of which are alcohol, opium, and tobacco, many may be loath to admit; but facts enable us to make this assertion without successful contradiction. For

years there has existed in the East End of London a tea-drinking club consisting of newspaper reporters, who every Saturday night have a spree on tea, as the result of which the members frequently become intoxicated as if under the influence of liquor. Several cases of delirium tremens from the use of tea have recently been reported in the medical journals, and according to recent reports, cases of intoxication from the use of tea are now becoming so serious in Boston that persons are sometimes found under arrest for disorderly conduct while under the influence of this drug. Our readers will be interested in the following quotation from the Boston correspondent of a Western journal, which appears under the heading, "Women Who Eat Tea":—

"Two servants who were hauled up before a Police Justice here the other day, charged with creating a rumpus, indignantly denied having been drunk. They said they had been somewhat under the influence of tea, which was responsible for their eccentric behavior.

"'But,' remarked the Judge, 'I never knew that any one could become really intoxicated from the drinking of tea.'

"'No more they can, yer Honor,' was the reply; 'We ate it.'

"It is becoming quite a popular vice in Boston, and presumably elsewhere,—this tea-eating.

And curiously enough, its victims are mostly found among the 'help,' who, having the household tea-caddy always accessible, get accustomed to helping themselves from it, a pinch at a time of the dry leaves. These they chew, thus extracting the alkaloid, which is a toxic agent of the most powerful description. Its first effect is an agreeable exhilaration. Ultimately it produces sleeplessness and an abnormal condition of mind, with strange wishes and delirium. It is an amusing fact, by the way, that when tea was first brought to England, about the year 1665, it was served experimentally for eating from a bowl, like spinach. For a long time after that it was regarded as a deadly drug, and people who sold it were considered disreputable."

Coffee Topers.—The following description of the effect of coffee-using at Essen, the home of the Krupps, famous as the manufacturers of the ponderous cannon now being sought after by all military nations, is taken from the *British Medical Journal*:—

"The great industrial center around Essen includes a very large female population. Whilst the women of the working-class in this country are often addicted to dosing themselves with tea that has stood too long, it appears that the workmen's wives at Essen drink coffee from morning to night. Some consume over a pound

of Ceylon coffee weekly, and one pound contains over sixty-four grains of caffeine. In consequence, nervous, muscular, and circulatory disturbances are frequent. The nerve symptoms are characterized by a feeling of general weakness, depression of spirits, and aversion for labor even in industrious subjects, with headache and insomnia. A strong dose of coffee causes the disappearance of these symptoms. The muscular symptoms consist of distinct muscular weakness, and trembling of the hands, even in rest. The circulatory symptoms are marked by small, rapid, irregular pulse, and feeble impulse of the heart. Palpitations and heaviness in the pericardial region are frequent. The hands and feet feel very cold, and the complexion becomes sallow. Dyspeptic symptoms, chiefly of the nervous type, are very common. Acne rosacea is seen in a large number of sufferers.

"These coffee-drinkers cannot be cured by simple abstention from their favorite drink, with substitution of milk as a beverage. They require rest from work, open-air exercise, and cold ablutions, followed by friction."

An Erroneous Notion about Meat-Eating.

—Nothing could be more erroneous than the popular belief that the use of flesh food is essential to physical or mental strength. The fact seems to have been forgotten that some of the most powerful nations of antiquity were non-

flesh-eaters. It is an interesting fact that all the nations of history who attained any remarkable ascendancy, were practically vegetarians. The early Assyrians and Egyptians were vegetarians on account of their religious belief. The Persians, the Greeks, and the Romans, as well as other lesser nations, were, at an early period of their history, vegetarian in their dietetic habits. Barley was the meat of the hardy Roman soldier, who carried an armor which a modern man could scarcely lift. The Greek and the Roman poets pictured the Golden Age, their ideal of a happy human existence, as a period in which flesh-eating and the slaughter of animals were

essarily made less susceptible to those influences and sentiments which are the best safeguards of human life in civilized communities. The boy murderer who some years ago was tried for the murder of his playmates from no other motive than natural blood-thirstiness, was the son of a butcher,—a fact which suggests a multitude of horrible reflections respecting the hereditary influence growing out of this slaughter of the innocents.

The strength of the ox, the elephant, the useful horse, and the mammoth hippopotamus, the fleetness of the reindeer, and the agility of the chamois, are derived from the natural products of the earth, and not from flesh. Second-hand food does not afford that degree of efficiency as a sustenance which is supplied by the purest products of the vegetable world. Flesh does not afford the elements most needed for the replenishment of strength, either physical or mental. Force is most readily derived from the products of the vegetable kingdom. A good example of this fact is afforded by the natives of the Canary Islands. The remarkably fine development and the astonishing vigor of these people have been observed by many travelers. All visitors to their island home attribute to the simple food of this people their superiority over the average of mankind in physique and ability to endure labor and hardship. The food of the Canary Islander

constipation, and depression of spirits from which many individuals suffer, is directly caused by an excessive ingestion of albuminoid elements of food, such as meat, milk, and eggs."

In the opinion of Dr. Fox, what feeble people require is not so much tonics, etc., as "an increased amount of exercise, together with a simple farinaceous diet, to promote strength and restore normal conditions. The effect of an exclusive meat diet in skin diseases is to increase the redness and itching in a notable degree, while a simple farinaceous diet would improve the appearance of the eruption."

Flesh food is not necessary to sustain either mental or physical vigor, or animal heat. It contains no nutrient element not found in vegetables. In fact, eating flesh is only taking vegetables at second hand, for all animals subsist upon a vegetable diet.

On the other hand, the use of meat is unfavorable to longevity. Flesh food is stimulating. It contains venous blood, which is filled with such poisons as urea, uric acid, and cholesterine, with many others which would have been removed by the kidneys and liver of the animal had it lived. It is also liable to contain the products and germs of disease; for few animals are perfectly healthy when killed, and many are in a condition of gross disease, being only hin-

dered from dying a natural death by the intervention of the butcher's knife.

Thousands of people have investigated this subject during the last twenty years, have become convinced that animal food is inferior to vegetable food, and have renounced the use of the former with most excellent results.

Vigorous Vegetarians.—The Congo railroad is not yet completed, and the cataracts of this great river render transportation by water possible only to a certain distance; and, curiously enough, there are no beasts of burden in this part of the world. The only means of transport is the shoulders of men. The porters are, according to the *Century*, "natives of the Bakongo tribe, inhabiting the cataract regions. In physique these men are slight and only poorly developed; but the fact of their carrying on their heads from sixty to one hundred pounds' weight twenty miles a day, for sometimes six consecutive days, their only food being each day a little manioc root, an ear or two of maize, or a handful of peanuts, pronounces them at once as men of singularly sound stamina. Small boys of eight and nine years old are frequently met carrying loads of twenty-five pounds' weight." This observation agrees exactly with the reports of travelers concerning the great strength of the rice-eating coolies of China, the banana-eating natives of South America, the vegetarian Hin-

doos, and the barley-fed Turkish peasant. It comports also perfectly with the fact that the strongest members of the animal kingdom, among which must be mentioned the ox, elephant, and hippopotamus, are strict vegetarians. Physiologists who make a scientific study of this question, are coming to recognize the fact that the flesh of animals is not necessary to the maintenance of the highest degree of health and physical vigor.

A Barbarous Taste.—The quotation given below, from "Missionary Enterprises," by John Williams, missionary to the South Sea Islands, illustrates several important facts :—

1. That flesh food is unnecessary for the maintenance of health and strength in human beings.

2. That the taste for flesh food is one so unnatural that when the natural, non-flesh diet is employed for a series of years, the taste for flesh is wholly lost.

3. That not only the taste but the smell of flesh food is repugnant to a person whose senses are undepraved.

4. That civilized nations have become so barbarous by the use of flesh food, as to look upon the vegetarian as a barbarian.

The extract reads as follows :—

"It was upward of ten years after our arrival in the islands before we tasted beef ; and when

we killed our first ox, the mission families from the adjacent islands met at our house to enjoy the treat ; but, to our mortification, we had so entirely lost the relish that none of us could bear either the taste or the smell of it. The wife of one of the missionaries burst into tears, and lamented bitterly that she should have become so barbarous as to have lost her relish for English beef."

A Live Hog Examined.—Look at that object in a filthy mud-hole by the roadside. At first you distinguish nothing but a pile of black, slimy mud. The dirty mass moves ! You think of a reptile, a turtle, some uncouth monster reveling in his Stygian filth. A grunt ! The mystery is solved. The sound betrays a hog. You hasten by, avert your face, and sicken with disgust. Stop, friend, admire your savory ham, your souse, your tripe, your toothsome sausage, in its native element. A dainty beast, is n't he ?

Gaze over into that sty, our pork-eating friend. Have you done so before ? and would you prefer to be excused ? Quite likely ; but we will show you a dozen things you did not then observe. See that contented brute quietly reposing in the augmented filth of his own ordure ! He seems to feel quite at home, does n't he ? Look a little sharper and scrutinize his skin. Is it smooth and healthy ?—Not exactly so. So obscured is it with tetter, and scurf, and mange,

that you almost expect to see the rotten mass drop off, as the grunting creature rubs it against any projecting corner which may furnish him a convenient scratching-place. As you glance around the pen, you observe that all such conveniences have been utilized until they are worn so smooth as to be almost inefficient.

Stir up the beast and make him show his gait. See how he rolls along, a mountain of fat. If he were human, he would be advised to chew tobacco for his obesity, and would be expected to drop off any day of heart disease. And so he *will* do, unless the butcher forestalls nature by a day or two. Indeed, only a few days ago a stout neighbor of his was quietly taking his breakfast from his trough, and grunting his infinite satisfaction, when, without a moment's warning or a single premonitory symptom, his swinish heart ceased to beat, and he instantly expired without finishing his meal, much to the disappointment of the butcher, who was anticipating the pleasure of quietly executing him a few hours later, and serving him up to his pork-loving patrons. Suppose his death had been delayed a few hours, as is the case with the majority of hogs! or rather, suppose the butcher had got the start of nature a *little*, as he generally contrives to do!

But we have not half examined our hog yet.

If you can possibly prevail upon yourself to sacrifice your taste in the cause of science, pork-loving friend, just clamber over into the reeking sty, and take a nearer view of the animal that is destined to delight the palates of some of your friends, perhaps your own. Make him straighten out his fore leg. Now observe closely. Do you see an open sore or issue a few inches above his foot, on the inner side? and do you say it is a mere accidental abrasion? Find the same on the other leg; it is a wise and wonderful provision of nature. But what are they? Grasp the leg high up, and press downward. Now you see, as a mass of corruption pours out. That opening is the outlet of a sewer. Yes, a scrofulous sewer; and hence the offensive, scrofulous matter which discharges from it. Should you fill a syringe with mercury, or some colored injecting-fluid, and drive the contents into this same opening, you would be able to trace all through the body of the animal little pipes communicating with it.

What must be the condition of the body of an animal so foul as to require a regular system of drainage to convey away its teeming filth? Sometimes the outlets get closed by the accumulation of external filth. Then the scrofulous, ichorous stream ceases to flow, and the animal quickly sickens and dies, unless the owner

speedily cleanses the parts, and so opens anew the feculent fountain, and allows the festering poison to escape.

What dainty morsels those same feet and legs make! What a delicate flavor they have, as every epicure asserts! Do you suppose the corruption with which they are saturated has any influence upon their taste and healthfulness?

The hog is a scavenger by nature. His organization indicates it; for he has a regular system of sewers running all through his body and discharging on the inside of his fore legs, the express object of which is to convey away the filth with which his body teems.

The process of fattening hogs is one of disease. A fat hog is one which is grossly diseased. That this is the case is shown by the condition of the liver. The livers of all fat hogs are masses of disease. Experienced butchers assert that the livers of very fat hogs are extremely apt to be affected by abscesses.

Tape-Worm.—This loathsome creature, which sometimes gets into the human stomach and intestines, and grows there to the enormous length of several rods, is communicated to man by eating pork. The occurrence of tape-worm is becoming much more frequent in this country than formerly.

Trichinæ.—Still more to be dreaded by pork-eaters are the terrible trichinæ, which are also

communicated by the eating of pork. Each worm is so small that several hundred thousand of them may occupy a single cubic inch of swine's flesh. When taken into the body, a single worm may produce a thousand young, which at once commence boring into the body in every direction, lodging at last in the muscles. The pain and general disturbance of the system is so great that few constitutions can survive the terrible ordeal. If life is not destroyed at once, the individual lingers along, a constant sufferer, his body filled with disgusting worms for which there is no remedy. No cure for the disease has been discovered. About one hog in every ten is affected by the disease. No more than one in ten of the deaths from this cause are attributed to it, as the disease may appear like many others, resembling cholera, dysentery, typhoid fever, cerebro-spinal meningitis, and rheumatism. No pork is safe.

Raw-Meat Diet.—Raw meat has so frequently been commended as an article of diet especially useful in various conditions of the digestive organs in both adults and children, that it is important to call attention to the fact that the danger involved in the use of a diet of this kind is far greater than can be counterbalanced by any good likely to be developed from it. Uncooked flesh is very likely to contain the embryo of animal parasites of various sorts,

such as tape-worm, trichina, etc. In addition, flesh which has not been subjected to a boiling temperature is certain to contain germs, some of which may be capable of producing the most dangerous symptoms when taken into the human stomach. In our opinion, uncooked flesh should be entirely discarded as an article of food by either sick or well. Raw flesh is less digestible than flesh which has been properly cooked, beside being much more liable to produce disease.

Salt Meats and Consumption.—It is well known to be a custom with butchers to salt the flesh of animals known to be tuberculous, selling the flesh after a few weeks. It is doubtless the supposition that in so doing the flesh is rendered wholesome by the death of the germs which occasion this formidable disease in animals and human beings. Recently, M. de Freytag, an eminent French physician, has been making experiments for the purpose of determining the influence of salt upon germs of different kinds, and he finds that while salt will kill or render inert the germs of fermentation, and many other kinds of germs, the germs of consumption, as well as those of typhoid fever, are practically unaffected by it, and continue to flourish even in strong solutions of salt.

The above facts are of the utmost practical importance, and should lead to increasing vigilance in preventing the consumption of the flesh



of diseased animals. It would seem that the use of salted meats is particularly hazardous, since they are more likely to be infected than are fresh meats, owing to the custom of salting diseased meats, above referred to.

Tender Meat.—Those who use animal food are always desirous of obtaining “tender” meat. In order to satisfy the demand for such food, the butcher and the producer resort to all sorts of devices. The former keeps the flesh of slaughtered animals after they are killed until decay has begun, in order that the natural firmness and elasticity of the tissues may be overcome by processes of decomposition. The latter treats his animals in such a manner previous to their death that their tissues become softened and disintegrated by disease. There are several means employed to effect this, chief among which are confinement and overfeeding. An exchange gives the following translation of a description of how young pigeons are fattened in Germany:—

“In order to fatten young pigeons quickly, put them, on the twentieth day, or when they commence to get feathers, into a basket with a soft layer of moss or hay on the bottom, in a place which freely admits the air, but excludes the light. Feed the birds three times daily, at intervals of five hours each, with cooked maize, opening the beaks and making them swallow

successively thirty to forty grains each. The maize should be warm, but not hot. By continuing this treatment ten or twelve days, the birds will become most tender and delicate."

Such meat would doubtless be "tender" enough to suit the most fastidious epicure. In this respect the plan suggested would certainly be perfectly successful ; but great care would be necessary lest nature should succumb and actual dissolution of the poor birds occur before their heads were chopped off. Mr. Bergh would have arrested the perpetrators of such cruelty.

Diseased Meat.—The increasing prevalence among cattle and other animals of diseases communicable to human beings, is awakening much interest among medical and sanitary authorities, regarding the possible adoption of measures for stamping out the prevailing maladies, and preventing the consumption of diseased meat, which is now undoubtedly extremely large. An English health officer stated, some time since, that the stomachs of Englishmen were the catacombs in which were buried the carcasses of more than 20,000 diseased animals. Probably many times that number of diseased animals are annually consumed in this country. Tuberculosis, anthrax, and other ailments communicable through the use of affected flesh, are increasingly prevalent, and the time is not far distant, if it has not already arrived, when the use of the flesh of any



animal which is not carefully inspected during life, and thus determined to be in a state of health, will be absolutely dangerous.

Consumptive Hens.—A French physician recently reported a case in which consumption was contracted by a large number of hens, by picking up the discharges of a young man living on the premises, who was suffering from this disease.

Catching Consumption.—French experimenters have ascertained that cows are very liable to consumption, and that the tubercle of this disease may be communicated by eating either the flesh or the milk of affected animals. This will account, in part, for some of the cases of “quick consumption ;” for it is observed that when the disease is communicated in this way, its progress is much more rapid than under other circumstances. When milk is used, the greatest care should be taken to obtain it from healthy animals.

Milk from Stabled Cows.—Milk is not the best food, because it contains the impurities of the blood of the animal from which it is taken. If the animal's blood be pure, the milk is proportionately good ; if it is impure, the milk must be likewise affected.

When cows are confined in a close stall, they breathe, over and over, the same foul air, which is always loaded with filthy vapors from their own

excreta. These vapors enter the blood, and poison every tissue and every secretion. The inhaled impurities make their appearance in the milk also, which thus becomes a means of excretion. If it is eaten, the filthy impurities of the stable are taken with it.

A writer of note truly says that "fully one half the deaths among the young are directly traceable to poisonous milk;" and yet thousands of people, especially in our large cities, are daily exposing themselves and their children to the possibility of fatal poisoning.

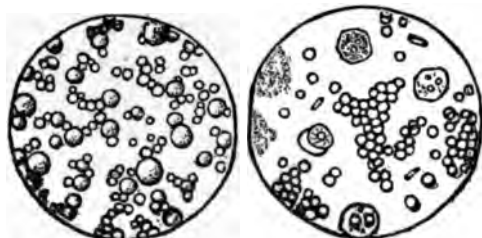


FIG. 1.

FIG. 2.

The taste is not always a reliable means for testing the quality of the milk, neither can the poisonous elements be detected by the closest scrutiny of the chemist; but the microscope reveals the presence of disease, although it may escape all other means of detection.

Fig. 1 is an accurate illustration of the appearance of pure milk when examined by means of a good microscope. It will be seen that it con-



tains nothing but rounded globules of various sizes, which are the so-called butter cells of milk.

Fig. 2 is an exact representation of the appearance of diseased milk under the microscope. This specimen was taken from a cow that was fed upon swill and confined in a filthy stable. The difference between these two specimens will be readily observed. In Fig. 2, in addition to the rounded globules which are alone found in Fig. 1, we have great numbers of minute organisms which are indicative of disease. Milk of this kind cannot be habitually used without producing serious disturbances in the system.

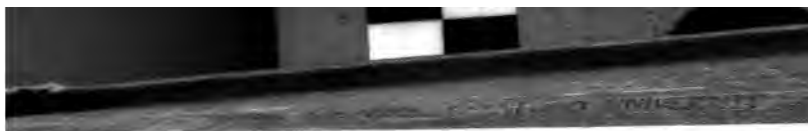
Contaminated Milk and Typhoid Fever.

—Doubtless a vast deal of mischief is occasioned by the use of milk contaminated with disease. Typhoid fever has many times been traced to this source. It is entirely possible that this fever is often produced in some other way than by the use of drinking-water contaminated with the germs of this disease. The infection may be received directly from cows. While it may not be probable that the germs of the disease escape from the body of an infected animal through the milk, the milk may nevertheless become infected through the medium of small particles of excreta, which fall into the milk from the udder during the process of milking. The remedies for this danger are obvious. Observe the

same care in selecting drinking-water for cows as you would for human beings, and see that the udder and adjacent parts are washed clean before milking.

Sterilized Milk.—This is the scientific name for milk which has been rendered germ-free by boiling. Cow's milk should never be fed to young children without being first boiled. Although free from germs when it first comes from a healthy cow, milk very quickly becomes infected with myriads of these enemies of life to which thousands of infants annually succumb. By boiling, these are killed, and the alimentary canal is thus kept free from the poisons which they generate in the process of growth, for which they find the most favorable conditions in the stomach and intestines.

To sterilize milk, place it when fresh from the cow in soda-water bottles, using as many bottles as necessary for the quantity of milk to be sterilized. Fill each bottle to within an inch of the top. Boil for ten minutes in a steamer or boiler. Stop the bottles tightly with a rubber cork, and boil for twenty minutes more. See that the corks are tight and well secured. Care must also be taken that the bottles and corks used for the purpose are scrupulously clean, and to insure this they must be not only well washed, but boiled for at least half an hour before using.



By the adoption of this precaution, thousands of lives would be saved annually. Boiled milk is not only free from germs, and so not likely to sour, but it is more easily digested, as it does not form large curds in the stomach as does raw milk: To render milk a perfect food for a young child, it should be enriched by the addition of cream in the proportion of an ounce of cream to a gill of milk. This should be diluted, of course, with the proper amount of water to adapt it to the age of the child; say with an equal quantity of water for a very young child, and half as much water for a child between one and two years of age. Such food is as digestible as mother's milk, and is no more likely to cause disease.

Cheese Poisoning.—Every eater of cheese ought to be informed of the fact that ripe cheese always contains poisonous substances. These are not ordinarily present in sufficient quantity to render their presence apparent by seriously toxic symptoms; but the fact that the cheese-eater may at any time swallow unawares a fatal dose of cheese poison, or a dose of sufficient size to imperil his life and entail great suffering, is evidenced by the frequency with which cases of cheese poisoning are reported. Some months ago, over two hundred cases were reported to the State Board of Health of Ohio, all occurring within a few days. The symptoms were vom-

iting and great pain in the stomach, violent purging, lasting from twelve to forty-eight hours, great prostration, and in some cases syncope.

The Inhabitants of Cheese.—Great interest has been shown in the discussion at various times of the question as to whether or not the moon is inhabited, and quite recently some curious light phenomena in connection with the planet Mars, have been interpreted as indicating that the inhabitants of that planetary neighbor of ours were endeavoring to attract our attention by means of a species of light telegraphy. No one has yet been able to make out the signals, but some earnest study is being given to the subject by persons who believe that the solar spheres are peopled by inhabitants closely resembling those of our world.

In view of the great interest in the matter of the hypothetical population of celestial bodies so far away from us, it is somewhat remarkable that so little interest should have been manifested in the study of populous communities much nearer home. The moon is not made of green cheese, as some of us were told in the early days of our investigations of scientific subjects, but if it were, it would be a vastly more populous planet than this earth; for, according to the observations recently published by Prof. Adametz, who has been making a careful study of the microscopic organ-

isms which inhabit cheese, this common food substance contains, in addition to the skippers, mites, and other visible maggots and larvæ with which all are familiar, prodigious numbers of microbes of various sorts.

According to Prof. Adametz, perfectly fresh cheese contains to every gram (fifteen grains) from 90,000 to 140,000 microbes. The population of a soft cheese twenty-five days old was found to number 1,200,000 for every gram, while the same quantity of a cheese forty-five days old, was found to contain 2,000,000 microbes. It was observed that the microbes were much more numerous near the outer portion of the cheese than in the center, probably due to the fact that proximity to the air favors their growth. One soft cheese examined was found to contain, near its outer surface, from 3,600,000 to 5,600,000 germs, in a quantity of cheese barely equaling in size a small marble. Combining many observations, it was found that cheese, on an average, contains in every pound nearly twice as many germs as there are people upon the face of the earth.

Notwithstanding these scientific facts, there are doubtless many persons who will continue to consume, under the name of "cheese," the usual quantity of decayed milk; and after swallowing some millions of microbes at a meal, will wonder

why they suffer from sour stomach, heart-burn, flatulence, biliousness, and a variety of other symptoms which are due to germs.

The Cannibal Instinct.—A very refined and cultured young lady was quite horrified, the other day, when told by the writer that her British ancestors, who were conquered and civilized by the Romans, were “cannibals.” Her horror was intensified when the remark was made that the cannibalistic instincts of the Anglo-Saxon race still survive. Proof of the statement being called for, the fact was cited that the fair speaker herself might furnish an example of this ferocious instinct. All the proof necessary was the fact that she had just been confessing to a great liking for raw oysters taken fresh from the shell and eaten with a little vinegar and pepper. “But,” she exclaimed in defense, “the oyster is not an animal.” “Certainly the oyster is an animal,” we replied, “as every schoolgirl ought to know in our day, and an animal that is well supplied with organs not so very much unlike those of our own bodies,—nerves, muscles, stomach, and an enormous liver, which constitutes a large part of the entire animal. If an oyster possessed the power of speech, we dare say some heart-rending shrieks would be uttered as the poor creature is torn from his shell. And if it were not paralyzed



by the rude treatment to which it is subjected, no doubt some lively squirming would be witnessed when the biting vinegar and the blistering pepper are applied to the poor creature's tender flesh. Just imagine, too, if you can, how it must feel on its way down to the stomach, and what its sensations must be as it is being devoured piecemeal by the gastric juice. Thackeray once said at a dinner table, after he had swallowed an unusually large oyster, that he felt as though he had swallowed a baby. We have known young ladies whose nerves were so delicate that they could not see a mouse or a spider without going into hysterics and declaring that they were nearly killed with fright, and we have known these very sensitive young women to swallow half a dozen live oysters without a single shiver or compunction of conscience. Eating oysters well disinfected by boiling is bad enough, but to swallow an oyster fresh from the sea, swarming with germs, and alive and wriggling, is to our taste inexpressibly repulsive.

Something about the Oyster.—A statement is traveling among the papers, bolstered up by such names as Dr. Lenac and Dr. Pasquier, to the effect that oysters are a panacea for persons suffering from impaired digestion, debility, and lowness of spirits ; that they are excellent in surgical cases, because they increase blood without

producing fever ; that they possess a most remarkable vivifying influence upon the nervous system ; and, lastly, that the liquor they contain is a noted tonic. It would be hardly possible to crowd more absurdities into the same space. The nutritive quality of the oyster is very low, being nearly all water, and bad water at that. Take an oyster and dry it, and see what is left. The oyster is not easily digested, requiring, when stewed, three and a half hours, and when eaten raw, thirty-five minutes less, or two hours and fifty-five minutes. It takes as long to digest the oyster as it does a hard-boiled egg, and nearly every one considers hard-boiled eggs unfit for an invalid stomach. Even roast goose takes no longer time for digestion, whereas there are plenty of simple, nutritious foods which digest in a much shorter time. Rice is digested in one hour, milk in two hours, and a soft-boiled egg in an hour and a half.

It has been supposed that the oyster was an aid to digestion when swallowed raw, in that it went on making gastric juice for a while after being taken into the stomach. Such a proceeding would appear rather cannibalistic at best, but the notion is entirely fallacious, as has been demonstrated by recent experiments. As to the liquor being a tonic, we have investigated the oyster from a microscopic standpoint, and find its juice to be literally swarming with myriads



of germs, wriggling and swimming about. The juice certainly needs to be disinfected before being used, and this a certain French physician has proposed to do. The Frenchman eats snails, which we are accustomed to look upon with loathing ; but these snails are vegetarians, living upon vine leaves, and certainly in the matter of diet are much superior to the slime-eating oyster. The oyster is one of the lowest of scavengers, and everybody knows that the food of an animal affects the flavor of its flesh ; for instance, if a hog eats carrion, the pork tastes of it. In the sea, nature has put a great variety of creatures at work as scavengers, by which means the water is in a large measure purified from the death and decay of animal and vegetable life within it. Once, when sailing on the Gulf of Mexico, we caught one of those beautifully colored creatures known as the Portugese man-of-war, and while examining it, suddenly noticed a terribly offensive odor, which was soon traced to a dead fish, around which it had twined its delicate arms all resplendent with color. But that was exactly what the creature was made for.

The scavengers at the top of the water have the first pick of all the decaying substances which find their way into it ; lower down, other scavengers make their meal ; but the crumbs from the tables of all the other scavengers drop to

the bottom, and there they find an oyster stuck in the mud, with its mouth wide open. The hard, brown part of the oyster is its excretory organ,—liver, kidneys, spleen, etc., all combined in one. Its diet is so bad that it needs a big liver to keep it alive. Why a man will turn away from fruits which hang ripe and luscious over his head, and put his hand into the mud after this loathsome creature, is more than one can imagine. It is singular how any one could have conceived the idea that the oyster is good for food. As an anonymous poet says :—

" That man must had a palate covered o'er
With brass or steel, who, on the rocky shore,
First broke the oozy oyster's pearly coat,
And risked the slimy morsel down his throat."

If additional reason for not eating the oyster is needed, it is found in the fact that a deadly poison known as tyrotoxin is liable to be contained in it. A while since, we were called to attend a patient who was deathly sick; the pupils of his eyes were dilated, he was in a cold, clammy sweat and vomiting terribly. He had been eating oysters, and told where he got them. We immediately sent for a quantity, and an analysis showed that they contained a large amount of the poison named. Repeated instances of this kind might be mentioned.

Poisonous Oysters.—A French scientist has recently been investigating the cause of the frequent occurrence of poisoning from the use of



oysters and other mussels. As the result of the investigation, he came to the conclusion that the poisonous action of mussels is due to the presence, especially in the liver of the fish, of an organic base, the mytilotoxine of Brieger, and that this is developed under the influence of a particular microbe occurring only in mussels that have lived in stagnant or polluted water. It should be added that it has been observed that oysters reared near the outlet of city sewers are frequently found to produce poisonous symptoms when eaten, especially at certain seasons of the year.

Poisonous Sirups.—For a number of years the people of this country have been abused by the manufacture and sale of villainous compounds which were labeled with such enticing names as “golden drip,” “silver drip,” and similar phrases. These so-called sirups, instead of being made from sugar or the sugar-cane, are manufactured by chemical processes, being made from starch, cotton rags, saw-dust, and similar materials.

It has long been known to chemists that a sweet substance, known as grape-sugar, could be produced by boiling starch for a long time with sulphuric acid. Saw-dust, cotton, and woody fiber in any other form, furnish the same product when treated in a similar manner. Unscrupulous knaves have taken advantage of this

scientific fact to impose upon the people a spurious kind of sirup. These fraudulent practices have become so extensive that it is next to impossible to find a specimen of sirup that is wholly free from contamination.

The effects of using this chemical preparation are very serious. It contains sulphuric acid, or oil of vitriol, iron, and various other unwholesome constituents. When freely used, it produces irritation of the stomach, and has, no doubt, been the cause of numberless cases of chronic dyspepsia. In one instance which occurred under our observation, more than a dozen people suffered at once with slight symptoms of poisoning, the consequence of eating candy made of this wretched stuff. It was observed that the teeth and tongues of those who ate of the candy were made very black; and without doubt the blackened teeth were permanently and seriously damaged.

It is important to know how to distinguish these adulterated and poisonous sirups from those which are pure. A convenient method, which is sufficiently accurate for practical purposes, is to add a teaspoonful of the suspected sirup to half a cup of strong tea. If the solution becomes black, like ink, the sirup is unfit for use and contains poisonous elements. It should certainly be discarded. If every family would adopt the plan of testing sirup before buying,



and refuse to purchase that which would not stand the test, the market for these vile compounds would soon be destroyed, and their manufacture necessarily cease.

Poisonous Baking-Powders.—All baking-powders are more or less harmful. The cheaper grades of baking-powders, nearly all of which contain alum, are exceedingly deleterious in character, producing, when used even for a short time, serious trouble with the stomach and bowels. But a still more dangerous powder, sold under the name of "French Tartar," has recently appeared. An analysis of this tartar shows that it often contains as much as 40 per cent of oxalic acid, an extremely poisonous substance. Many baking-powders are adulterated with carbonate of ammonia, a cheap chemical substance. Many bakers are in the habit of using ammonia in some form as a "raising" ingredient, in cakes and other pastries. There are two facts in this connection which ought to be generally known, the first of which is that ammonia is not entirely driven off by heat. There are many experiments which show that a considerable percentage of ammonia, when used in the form of a carbonate, is retained in the bread and cakes raised with this material, even twenty-four hours after being taken from the oven. Second, it should be known that ammonia is a poisonous substance. When taken into the

stomach for any considerable time, it greatly impairs its action, by neutralizing the gastric juice. When absorbed, it injures the red blood corpuscles, thus affecting the nutritive processes of the entire body. The safest way is to avoid the use of baking-powders altogether. The lightest and sweetest of bread can be made without baking-powder or rising material other than pure air.

The Harmfulness of Soda.—Soda, saleratus, cream of tartar, baking-powder, etc., are chemical substances, and in no sense foods. None of these substances should ever enter the stomach. There is no more active dyspepsia-producing article of food than the soda and saleratus biscuit so commonly found upon the tables of both rich and poor, and it is also unquestionably true that their continued use results in harm to the liver and kidneys, which are compelled to remove these alkalies from the blood. The idea entertained by many that these ingredients are harmless because alkalies and acids neutralize each other chemically, is entirely fallacious. They neutralize but do not destroy each other, forming instead a salt quite injurious to health. Properly made yeast bread is to be preferred to that prepared with such substances, and unleavened bread is far superior to either.

Lager Beer as Food.—After such repeated refutations of the idea, it is strange that people should still cling to the notion that lager beer is



nourishing. If a man has lost his appetite, and seems to be failing in strength, or losing weight, his next-door neighbor advises him to drink daily a few glasses of lager beer. If a nursing mother has insufficient food for her infant, wise old ladies prescribe larger beer or ale.

Although it is being constantly reiterated in the ears of the people that alcohol is not food, and that beer and ale are only dirty mixtures of alcohol and water, still they refuse to believe that these pernicious beverages cannot, in some way, impart nourishment and strength. Perhaps the testimony of one of the greatest of European savants will correct the opinions of a few.

Said Prof. Baron Liebig, a German chemist of great renown, "We can prove with mathematical certainty that as much flour or meal as would lie on the point of a table-knife is more nutritious than five measures [ten quarts] of the best Bavarian beer." Powerful nutriment, indeed!

Two Meals a Day.—According to Hippocrates, a very noted Grecian physician who lived a few centuries before Christ, the Grecians of that age ate but one meal a day. He advised, however, that two meals should be eaten, as by so doing there would be less liability to overeating. Thus it is evident that the "two-meal system," as the custom of eating two meals a day is called, is not by any means a modern innovation, but

has the sanction of antiquity. It is also a fact worthy of mention in this connection, that the ancient Grecians were among the most hardy, energetic, and courageous, as well as learned, of all the nations of whom we have any historical record. Their feats of physical prowess astonish the world; and their rank as thinkers is in no way inferior to that of any other people who have ever lived. The advantages of two meals instead of three are very numerous; and there are no substantial objections to the practice in any but a few exceptional cases. Of course there are cases in which three meals a day, if the supper be light and early, are preferable to a less number, and for such two meals are not recommended.

It would have been infinitely better for human stomachs if the ancient custom of eating but twice in a day had been maintained. There are a great many other directions, as well, in which modern practices are no improvement over ancient ones, and which call for reform by a return to the customs of our predecessors.

Eating Between Meals.—The stomach requires rest as well as the brain or the muscles. If food is eaten at other times than at meals, it is kept constantly at work. From three to six hours are required to digest most articles of food; hence, if food is taken again within five or six hours after eating, the stomach is kept in-

cessantly employed, and becomes exhausted. When the next meal is taken, it is unprepared to receive it, and indigestion with its myriad train of ill results. Late suppers are suicidal. Never eat within five hours of retiring.

Hasty Eating.—Americans are proverbial for hasty eating. The student swallows his food unmasticated, and hastens back to his books. The merchant bolts his meals to save time for business. The glutton eats as fast as ever he can, to keep pace with his neighbors and get his full share.

It is not enough to fill the stomach with food. Digestion begins in the mouth; and unless the mouth does its share of the work, the stomach is required to do a double portion. When the food is sent down into the stomach in lumps, the abused organ does its best to digest it, but fails, because it has no means for grinding food.

The mill is in the mouth, and mastication, if done at all, must be done there. The gastric juice cannot act upon solid food, and hence allows it to go undigested. Fermentation ensues, and dyspepsia, dysentery, cholera morbus, and a dozen other diseases result.

Eight ounces of food, well masticated, will afford as much nourishment to the body as a pound hastily bolted.

Cheerfulness at Meals.—The benefit derived from food taken, depends very much upon

the condition of the body while eating. If taken in a moody, cross, or despairing condition of mind, digestion is slower and much less perfect than when taken with a cheerful disposition. The very rapid and silent eating too common among Americans, should be avoided, and some topic of interest introduced at meals, in which all may participate ; and if a hearty laugh is occasionally indulged in, it will be all the better.

Diet and Mental Labor.—Isaac Newton performed his most severe intellectual labor while subsisting upon a diet of bread and water. Pythagoras, one of the most acute philosophers of antiquity, was a rigid vegetarian, and educated his followers in the same regimen.



TESTS FOR ADULTERATIONS

THE following tests for various adulterations of food, or articles used in the preparation of food, are condensed from the "Home Handbook of Domestic Hygiene and Rational Medicine":—

Detection of Alum in Bread.—The simplest method is to dip a slice of the suspected bread in a solution of logwood in water (either the extract or fresh chips may be employed). If alum is present, the bread will become a claret color. A more precise method is the following: Macerate in three or four tablespoonfuls of water a half slice of bread; strain off the water, and add to it twenty drops of a strong solution of logwood. Then add a large teaspoonful of a strong solution of carbonate of ammonium. If alum is present, the mixture will be changed from pink to a lavender-blue. This test will discover a grain of alum in a pound of bread.

To Detect Blue Vitriol in Bread.—Dissolve some of the bread in warm water. Add a strong solution of prussiate of potash. If copper is present, a chocolate color will appear.

Adulterations of Butter.—The presence of annatto is shown by the unnaturally deep color of the butter. Other adulterants are easily detected by melting the butter with gentle heat, which causes them to separate.

Test for Glucose.—The presence of glucose in sugar can easily be detected by the following method : Dissolve in a test-tube half a teaspoonful of the suspected sugar in two teaspoonfuls of warm water. Add six or eight drops of a strong solution of blue vitriol. This will give to the solution a faint blue tinge. Now add a solution of caustic potash. This will deepen the blue color greatly, and produce a curdy appearance. Continue to add the potash until the solution becomes clear, shaking the test-tube frequently so as to mix the contents well, and then heat to boiling in the flame of a spirit-lamp. If grape-sugar is present, as the liquid approaches the boiling point a yellowish color will appear, which will soon deepen to orange, then orange red, then deep red. The changes in color are due to the precipitation of red oxide of copper, which is the chemical test for grape sugar.

Inorganic adulterants of sugar can be readily detected by dissolving the sugar, when they will appear as a sediment.

Adulteration of Sirups.—This fraud is not always easy to detect, but it may generally be



discovered through the action of well-known chemical re-agents upon the sulphuric acid and iron which "corn sirup" is almost certain to contain. These substances may be detected by the following means :—

It is well known that iron with tannic acid forms a black compound. It is by this means that ink is made from oak-bark or logwood and salts of iron. Hence by adding a little of the sirup to a solution of tannin, it will become black. Common tea contains tannin in sufficient quantity to make a good test. Into half a cup of moderately strong, clear tea put a tea-spoonful of the sirup. If the tea becomes black, iron is present in the sirup. It is true that the iron itself in very small quantities may not be productive of great injury, though in the quantities in which we have found it we think it might do harm ; but a knowledge of its presence is of value as indicating the probable presence of sulphuric acid and of glucose. Sirup or sugar which will blacken tea may well be suspected and avoided.

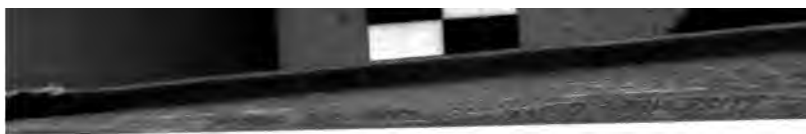
Procure at a drug-store a dram of nitrate or chloride of barium. Dissolve in a few spoonfuls of water. Dissolve some of the sirup in warm water in a test-tube or clear, clean vial. Add some of the barium solution, and shake. Set aside for half an hour. If a white powder

appears at the bottom of the vial as a sediment, the sirup undoubtedly contains sulphuric acid, and should be rejected.

The adulteration of sirup is so common that it is entirely unsafe to purchase or use the article, no matter how alluring its name or fine its appearance, without ascertaining its purity by careful testing.

Adulterated and Artificial Honey.—A large share of the strained honey in market is adulterated with glucose, as well as are sirups. In some cases, so-called honey contains not a particle of the genuine article, being simply a flavored sirup of glucose. We have examined specimens in which considerable quantities of sulphuric acid were present.

It is stated that another very ingenious form of adulteration of honey has been quite extensively practiced. What is termed the foundation of the comb is made of paraffine, a wax-like substance made from petroleum. This saves the bees much labor, as they have but to build up the cells on the foundation furnished them. Then, to still further economize their time and labor, they are abundantly supplied with glucose in solution, which they have but to transfer to the comb, thus avoiding the trouble of gathering sweets from distant fields. Of course no transformation takes place in the artificial sugar, it being simply transferred from the feed-



ing vessel to the comb. Thus we have honey which is wholly artificial with the exception of a portion of the wax. This certainly caps the climax of adulterations.

The tests for artificial and adulterated honey are the same as those for glucose in sirups.

Adulterations of Baking-Powders.—Baking-powders are preferable to soda, saleratus, cream of tartar, and sour milk, in the way these substances are commonly used, and yet they may be dispensed with, and with benefit to the health. The alum powders are the worst of all compounds used for raising bread. They should never be employed. The presence of alum in baking-powder may be detected by testing for alum the bread made from it, as already directed.

Canned Fruits and Vegetables.—Canned fruits and vegetables are often adulterated with coloring and flavoring substances of an unwholesome character. The most common are red coloring matters in tomatoes (not common in this country), fuchsine and aniline in fruits, and salts of copper in peas and other green vegetables. It occasionally happens, also, that the solder with which the cans are closed causes contamination of fruits with lead. Sometimes the cans themselves are a still greater source of danger, being made of lead-tin.

When the coloring matter is of an earthy

character, some portions may be found in the bottom of the can as sediment. When fuchsine or aniline is present, it may be detected by placing in the juice of the fruit, as found in the can, a few threads of white woolen yarn or worsted. After half an hour remove the threads, and if the coloring matters mentioned are present they will be colored red, as will not be the case if only the fruit juices are present.

Adulteration with copper may be strongly suspected if such vegetables as peas have a bright green appearance. The presence of copper will be proved if a sewing-needle placed in the can over night, after adding a few drops of sulphuric acid, is found to be coated with a coppery colored film in the morning. A very small proportion of copper may be detected in this way.

Preserves, Marmalade, Etc.—In many cases, preserves are colored with fuchsine and aniline, as are some canned fruits. Marmalade often consists chiefly of apples flavored with orange essence. Copper is also sometimes found, as in canned fruits. It is usually accidental, however, its presence being due to the fact that preserves are generally made in copper kettles, some of the copper being dissolved by the juices of the fruits, the solution of the copper being facilitated by the heat and the stirring. On this account preserves should never be made in copper kettles.

Jellies.—It is rare to find in the market such a thing as pure fruit jelly. If found, it will be held at a high price. The ordinary jellies sold are largely made up of gelatine, colored with aniline and other dye-stuffs, and flavored with various essences. Many of them contain not a particle of the fruit after which they are named. A less harmful but no less fraudulent form of adulteration is the use of apple jelly, flavored to suit the different varieties for which it is sold. The coloring matters may be detected by the method already described; but so few are pure, it is best to avoid them altogether.

Fruit Extracts.—The science of chemistry has lent its aid to the art of adulteration so effectually that almost, if not quite, every one of the principal fruit flavors is imitated by chemical compounds so closely that the difference cannot be detected by the taste, though, undoubtedly, the difference is readily noticed by the stomach. Not only are these essences sold at retail for domestic use, but they are largely, in fact almost exclusively, used by bakers and confectioners. Pastry, jellies, and ices are made still more atrocious by the addition of these abominable mixtures. Candies also are flavored with the same vile compounds. Serious illness and even death has frequently been caused, by the use of articles containing the poisonous substances above mentioned.

Vinegar and Pickles.—Vinegar is very often adulterated with mineral acids, sulphuric acid being the most commonly used. Many specimens of vinegar offered for sale as cider vinegar, has not a drop of apple juice in them. Vinegar is itself an unwholesome article ; but it becomes tenfold more injurious when adulterated with strong acids, injuring not only the stomach, but the teeth. The presence of sulphuric acid, or oil of vitriol, may be detected by the test given for this acid in sirups. It is said that it may also be detected in the following manner : Add to the vinegar a small quantity of sugar. Then put a drop or two on a clean plate and evaporate at a low heat. If the acid is present, the spot will become black, through its action on the sugar.

Tea and Coffee.—These substances, used as beverages in infusion, are largely adulterated, though in the case of coffee the adulterants employed are not worse than the original substance. Tea is, however, rendered even more unwholesome than it naturally is, by the addition to it of Prussian blue and various other harmful substances. It is a fact worth remarking, that Chinamen in this country will not drink the tea which is imported from their country for American consumers.

Prussian blue, indigo, black lead, gypsum, turmeric, and various other substances used as



facing, may be easily detected by either one of the following methods :—

Place two or three ounces of the tea in a piece of thin muslin, and shake well over a piece of white paper. Examine the dust thus collected with a magnifying glass capable of enlarging ten or fifteen diameters. An ordinary botanizing glass answers the purpose admirably. Prussian blue appears as brilliantly blue, transparent, angular particles. Indigo particles are greenish blue and opaque.

Another method is to wash a few ounces of tea with cold water, placing the washings in a glass to settle. Examine the sediment in the manner directed.

Nearly all the substances used in the adulteration of coffee may be detected by means of the microscope. The following simple means are also usually sufficient to determine the character of any specimen of coffee :—

1. Notice if the ground coffee cakes in the paper or package containing it, or when pressed between the fingers. If it does, it is spurious.

2. Place a few pinches upon water in a goblet. If part floats while another portion sinks, it is adulterated. Pure coffee absorbs water slowly, and so floats for some time ; while the substances used to adulterate it absorb water quickly, and sink. The amount of adulteration can be readily

estimated by observing what proportion sinks speedily.

Adulteration of Tin.—On account of the increased cheapness and convenience of manufacture, a large share of the tin plate made at the present time contains in it a considerable proportion of lead. This kind of tin may be detected by a simple test which any one can apply. Place upon the metal a drop of nitric acid, spreading it to the size of a dime. Dry over a gentle heat, apply a drop of water, and then add a small crystal of iodide of potash. If lead is present, a yellow color will make its appearance very quickly.



TEMPERANCE.

Forty Scientific Arguments Against the Alcohol Habit.

1.—Alcohol is a Chemical Agent.—The chemist describes alcohol as a liquid technically known as *hydrated oxide of ethyl*, containing two atoms of carbon, six of hydrogen, and one of oxygen, and represented by the formula, C_2H_5HO . It is colorless when pure, and very inflammable, burning with a pale blue flame. It is closely allied to such chemical compounds as naphtha, turpentine, benzine, fusel oil, kerosene, and burning fluid. It is seldom found pure, usually containing from two to fifty per cent of water, besides various impurities, chief among which is *fusel oil*, another variety of alcohol.

With the exception of air and water, no example can be produced in which a chemical compound is of service in the vital economy as an article of habitual use ; and neither of these really enters into the vital structure of the body. The oxygen of the air destroys the worn-out particles of the body, and water is the vehicle by which useful material is introduced into the

body and circulated through it, and impurities and useless particles washed out of the tissues, and removed from the vital domain.

2.—Alcohol Possesses Active Chemical Properties.—The active chemical properties possessed by alcohol render it not only unfit for introduction into the body, but actually dangerous. As we shall hereafter show, its various active chemical and physical properties are the means by which it exerts so potent an influence for evil. No one would think of making habitual use as a beverage of sulphuric acid, aqua ammonia, or any similar substance possessing equally active chemical properties, and yet alcohol, in a pure state, is scarcely less active than the substances mentioned.

3.—Alcohol is a Desiccant.—Pure alcohol is a most powerful drying agent, on account of its great affinity for water. So great is its avidity for water that it is extremely difficult to obtain it in a perfectly pure state, and it is equally difficult to preserve it free from water when it has been made so by delicate chemical processes. A piece of flesh placed in alcohol soon becomes shriveled, hard, and leathery from the action of the alcohol upon its albuminoid elements. This action is readily shown by the following simple experiment :—

Place in a goblet the whites of two or three eggs from which the yolks have been carefully

removed. Now add two or three tablespoonfuls of strong alcohol. In a minute or two the colorless, transparent albumen has become opaque, white, and hard, as though it had been dropped into boiling water.

A piece of the most tender steak placed in alcohol becomes in a few days as tough as sole leather.

It is due, in part, to this desiccating or drying property that alcohol does its work of destruction upon the blood corpuscles, the liver, the brain, and various other parts of the body. The brain of a hard drinker can be distinguished from that of a total abstainer by its hardness. The famous anatomist, Hyrti, asserted that he could tell the brain of a drunkard in the dissecting-room in the dark.

4.—Alcohol is an Antiseptic.—Although itself the result of fermentation, alcohol has the remarkable property of preventing this change in other substances. It has been suggested that this is an argument in favor of its use as a beverage, as it may prevent the destruction of the tissues and so preserve life. The argument is in the highest degree fallacious. Alcohol preserves from decay, but not from death.

A few years ago the writer heard of an old gentleman who had reached the advanced age of one hundred and seventeen years. Thinking that this remarkable age might have been at-

tained through temperate habits of life, he took considerable pains to hunt him up. To his disappointment, he learned before seeing the centenarian that he had been addicted to the use of whisky and tobacco for upward of a century. He found him puffing away at a short pipe, a poor, shriveled-up caricature of humanity, with only a partial semblance to human form, quite incapable of any enjoyment but the sort of negative pleasure afforded by his pipe and toddy ; in fact, nothing more nor less than a human pickle, —*dead*, in a practical sense, for thirty or forty years, though his friends had neglected to bury him. Alcohol makes a very good pickle, but human pickles are not useful members of society.

5.—Alcohol Comes of a' Bad Family.—
“A man is known by the company he keeps.” This adage is equally as applicable to some other things as to men. It holds good respecting alcohol, at least. Chemical compounds are divided into groups, the various members of which possess similar characters as regards composition and properties ; and it is not usual to find one member of such a group possessing only wholesome or negative properties, while all the rest are virulent poisons. Among the various groups of chemical compounds referred to, there is one known as the “Alcohol Group.” The following is a list of the principal members of the—

ALCOHOL FAMILY.

	Chem. Comp.
Methylic Alcohol (naphtha),	$C H_3 HO$
Ethylic Alcohol (com. Alcohol),	$C_2 H_5 HO$
Propylic Alcohol,	$C_3 H_7 HO$
Butylic Alcohol,	$C_4 H_9 HO$
Amylic Alcohol (fusel oil),	$C_5 H_{11} HO$

The first, *Methylic Alcohol*, or wood naphtha, is derived from the distillation of wood. It produces intoxication very quickly, when drunk, but its effects are very transient, owing to its great volatility.

The second in the list, *Ethylic Alcohol*, or wine spirit, is the intoxicating element of spirituous liquors, and is obtained by the distillation of fermented liquids. The most common form in which it is used as a beverage is in brandy, whisky, beer, wine, etc. It is seldom found pure in commerce, being usually mixed with water. This variety of alcohol is more intoxicating in its effects, and more injurious to the vital tissues, than the preceding.

Propylic Alcohol, like the preceding, is obtained by distillation, being one of the by-products of the process of making common alcohol from fermented grain. It is not used as an intoxicant, except as an impurity of ordinary liquors; but when obtained in a pure state, as it has been for purposes of experiment, it is

found to be heavier and still more intoxicating than the preceding.

Butylic Alcohol, the fourth in the list, is generally obtained by the fermentation of beet root. This member of the family is still more active in intoxicating properties than those already mentioned, producing an intoxication which is very slowly recovered from, and in which there is very great prostration, trembling of the muscles, and great coldness.

Amylic Alcohol, or fusel oil, is produced in the fermentation of potatoes, and also, to some extent, in the fermentation of grains and fruits. It has a burning taste and pungent odor, and is the characteristic constituent of bad whisky. A few drops of fusel oil will produce as profound an intoxicating effect as a considerable quantity of ordinary alcohol, which accounts for the infuriating and deadly effects of bad whisky, as well as its rapidly fatal properties, as seen among miners, negroes, and Indians. The deadly effects of cheap rum from the West Indies have become so manifest in some of the South Sea Islands controlled by the English Government, that it has become necessary to prohibit its introduction.

There are numerous other alcohols closely allied to those mentioned, and with similar properties, besides those numerous other compounds which are classed by the chemist in the "alcohol

series," among which are the well-known substances, *carbolic acid* and *creosote*, the caustic and poisonous properties of which are too well known to require more than mention. If not own brothers, these compounds are at least cousins of "the demon of the cup."

A DOZEN CHILDREN OF BACCHUS.

The *Ethylic* member of the "Alcohol Family" has a numerous progeny, representatives of which are found in all the countries of the globe. The chief of those in common use as beverages in this country are included in the following table, which also gives the percentage of alcohol each contains:—

	Per cent.		Per cent.
Small Beer,	1-3	Whisky,	46
Cider,	5	Rum,	48
Perry,	5	Brandy,	54
Ale,	10-20	"Bitters,"	6-60
Wine,	7-25	Jamaica Ginger,	
Gin,	39	Absinthe,	

It will be noticed that the "bitters" given above (Richardson's) contain more than the strongest rum. "Temperance Bitters" are more than one sixth alcohol; and "Vinegar Bitters," the manufacturers of which publish a temperance almanac to advertise it, and claim that it is absolutely free from alcohol, contains more alcohol than small beer, hard cider, or light wine. These "bitters," with scores of others have an immense sale, thousands making ha-

- bitual use of them who profess to be total abstainers. Several of them are kept on the counters of bar-keepers as regularly as "Holland Gin," "Jamaica Rum," or "Old Rye."

"Jamaica Ginger" will burn like pure alcohol, and absinthe is a compound of very strong alcohol with oil of wormwood. The latter intoxicant has been introduced into this country only very recently, but is to be seen displayed in the windows of the grogshops in certain parts of New York and other large cities. It has been in use in France for many years, and as we were credibly informed when in Paris, is there well recognized as exceedingly deadly in its effects, producing speedy derangement of the stomach and a rapid decline.

6.—Alcohol is a Poison to Plants.—Vital properties are pretty much the same in a general way, whether manifested by a mushroom or a man; and any substance which will destroy the life of a plant is not likely to be wholesome for human beings. If a plant be watered with a solution of alcohol, its leaves soon wither, turn yellow, and the plant dies, even when the proportion of alcohol is so small as one part in one thousand parts of water.

7.—Alcohol is a Poison to Animals.—A tadpole dropped into a vessel containing alcohol dies in a minute. Leeches and other small animals succumb in like manner. Some time ago

the writer tried an experiment with small minnows, the following description of which is quoted from a lecture before the Lake Bluff Temperance Convocation, August, 1882 :—

“I made an experiment the other day with some minnows. First I put a minnow into a glass containing two teaspoonfuls of alcohol in a half pint of water. In five seconds it turned over on its back, in ten seconds it began to float toward the top, and in sixty seconds it was dead. I thought that if I dropped another into a glass containing pure alcohol, it would die at once. I tried it, and the minnow lived for three minutes. I then put a minnow out on the table, and it lived for six or seven minutes. I determined that the reason for this curious result was that when the minnow was put on the table it simply died of suffocation. In the first case, where the fluid was about the strength of small beer, the minnow became saturated with the alcohol inside as well as outside, by taking it in through the gills, and thus died of alcoholic poisoning. In the second case, the gills closed firmly as soon as the minnow was dropped into the alcohol, and it died because it could not breathe, just as the other one died when laid out on the table. This might be taken to show that, in the case of the minnow, at least, moderate drinking is more fatal to longevity than hard drinking.”

A New York journal recently reports a series

of experiments by a French physician on the influence of alcoholic liquors on fowls, as follows:—

“He administered to them brandy and absinthe, and found one and all to take so kindly to their unwonted stimulants that he was forced to limit each bird to a daily allowance of six cubic centimeters of spirits or twelve of wine. There was an extraordinary development of cocks’ crests, and a rapid and general loss of flesh. The experiments were continued until it appeared that two months’ absinthe drinking sufficed to kill the strongest cock or hen, while the brandy drinkers lived four months and a half, and the wine bibbers held on for ten months, before they died the drunkard’s death.”

The eminent Dr. Dujardin Beaumetz, of Paris, has been engaged for some years in conducting experiments on the effect of alcohol on various animals, chiefly pigs, and finds it to be uniformly that of a poison.

A brilliant writer wittily says, “If lower animals were addicted to the drug to one tenth the degree man is, in a short time there would not remain upon the face of the earth an animal which would be *tamable*, *workable*, or *eatable*.”

8.—Alcohol is a Poison to Human Beings.—Notwithstanding the apparent impunity with which diluted alcohol in the form of various liquors may be taken, pure alcohol is rapidly

and certainly fatal when taken into the stomach without dilution. Cases of instant death from drinking a considerable quantity of strong liquor have often been recorded ; and numerous cases of death from this cause are constantly occurring in every large city. As we shall show hereafter, alcohol in every form is still a poison, the rapidity of its effects being largely determined by the degree of dilution in which it is introduced into the system.

9.—Alcohol is a Destructive Agent.—

Aside from its poisonous character, using the word in the ordinary sense, alcohol is a destructive agent. When pure, it possesses properties closely allied to those of a caustic, and when taken into the mouth occasions an intense burning. Applied closely to the skin, it speedily destroys it. This is exactly what would be expected of any chemical agent possessing such active properties.

10.—Alcohol is an Irritant.—The irritating effects of alcohol are readily observed by placing a drop upon a raw surface, or in contact with some sensitive organ, as the eye. Even a very dilute solution will produce intense inflammation. Still more profound, though for the time less sensibly irritating, effects are produced when the alcohol is absorbed into the system and comes in immediate contact with the delicate internal structures of the body.

11.—Alcohol as a Narcotic.—Alcohol is exciting in its first effects ; but like most other substances of similar nature, its secondary and more prominent effect is narcotizing. It benumbs the sensibilities. If a man is exhausted, it relieves the feeling of fatigue by obtunding his senses, not by replenishing his wasted energy. Persons who have died from the effects of an overdose of alcohol, present all the indications of narcotic poisoning.

12.—Alcohol as an Anæsthetic.—A table-spoonful of strong alcohol held in the mouth for two or three minutes, will obtund the sense of taste so as to render a person unable to determine between sweet and sour, saline and bitter. If taken in sufficient quantity, it will relieve the sense of pain sufficiently to enable a surgeon to perform an operation with little or no suffering on the part of the patient.

13.—Alcohol as a Food.—The aristocratic toper who wishes to give an air of respectability to his vice, will claim that alcohol is a food. He will cite, in proof, instances in which persons have lived for weeks by the aid of no other nutriment, taking nothing but alcohol and water. This semblance of argument scarcely needs exposure ; for the most that can be claimed is that it proves merely that persons have lived several weeks while taking only alcohol and water. The fact that individuals have in several instances



been known to live from thirty to sixty days while taking only water, shows conclusively that those persons who lived a shorter time on brandy and water, lived in spite of the alcohol instead of by the aid of it.

14.—Alcohol is Not a Beverage in a Physiological Sense.—Water is the *only drink*; that is, the only liquid capable of supplying the demand of the system for fluid. The various beverages in common use are of value only to the extent that they contain water, the universal solvent. Alcohol, then, is neither food nor drink. It satisfies the craving for food, but does not replenish the tissues. Although a liquid, instead of supplying the needs of the system for liquid food, it creates a demand and a necessity for more.

15.—Alcohol Makes Bad Blood.—Those who have maintained that alcohol is a food have made many experiments for the purpose of establishing their theory upon scientific ground. By these experiments it has been found that the urine and other excretions contain less of the worn-out material of the tissues when a person is using alcohol than when he is abstaining. From this alone it is concluded that alcohol prevents the wearing out or disintegration of tissue—a most astonishing conclusion. No one but a man stoutly prejudiced in favor of alcohol would think of forming such a conclusion. A

far more rational deduction from the premises would be that the presence of alcohol in the system *prevents* the excretory organs from eliminating from the body the *dead* and *poisonous products* which result from the wearing out of the tissues. This conclusion would seem to be far more reasonable, since alcohol itself is a poison which is thrown out by the same organs whose proper function it is to remove the debris of the tissues. These organs cannot perform more than a certain amount of labor. If most of their activity is expended in eliminating alcohol, of course they can perform less of their proper labor, and so the dead products of disorganization will be left to accumulate in the body, and produce a deceptive increase of weight. It is by this means that the drunkard often acquires a bloated appearance. Every one knows that such an accumulation of tissue is not healthy flesh ; yet it is of the same character as that which leads some prejudiced scientists to pronounce in favor of alcoholic beverages as a preventive of waste.

It is on account of this impure state of the system that the flesh of spirit-drinkers is notoriously so difficult to heal in cases of wounds or surgical operations.

16.—Alcohol Destroys the Blood.—When this fiery drug is taken into the stomach, it is soon absorbed into the circulation, where it

comes in contact with the corpuscles of the blood. No sooner does it touch these little bodies than they begin to shrink, and soon lose all resemblance to their natural appearance. In a short time, they are seen to be breaking up into fragments; and in five minutes from the commencement of the experiment, the once beautiful and symmetrical little bodies which compose one half of the blood, are reduced to broken fragments and shapeless masses. They have been fairly cut into pieces and eaten up by the alcohol.

The contact of alcohol with the corpuscles also causes them to lose their coloring matter, a very important part, as it is by means of this that they are enabled to perform their work as oxygen carriers. This effect may be observed in those which give no other evidence of injury from the alcohol. When taken in considerable quantity, it causes the corpuscles to adhere together in little bundles, thus occasioning obstructions of the capillaries.

“But what harm does this do?” says the drunkard or the moderate drinker; “the loss of a few blood corpuscles cannot be of any great consequence.” The ultimate effect is the same as though the supply of air was cut off from the lungs by a cord tightly drawn around the neck. The business of the red blood corpuscles is to carry oxygen from the lungs to the

tissues. If they are destroyed, oxygen cannot be carried in sufficient quantity, and the blood becomes foul, being charged with large quantities of carbonic acid, the poisonous substance which ought to be replaced by oxygen. One of the quickest known ways of destroying life is to cause an animal to inhale a poisonous gas known as carbonous oxide, which has the effect of paralyzing all the blood corpuscles. Alcohol does the same thing just in proportion to the quantity taken.

17.—Alcoholic Degeneration.—In addition to its effects upon the corpuscles, alcohol produces other serious changes. One of the most important of these is coagulation or thickening of the fibrine of the blood, which occasions the formation of little clots, which are swept along in the blood current until they reach the finest capillaries, where they are lodged, thus obstructing the circulation, and, according to the eminent Prof. Carpenter of England, constituting the first beginning of organic disease of the nerve centers and other important organs. These minute clots often occasion troublesome abscesses, and when they become large, as they sometimes do, they may produce instant death by the plugging up of a large artery in the brain, an accident which, there is every reason to believe, is not uncommon in persons addicted to the use of large quantities of alcoholic spirits.

Alcohol also greatly increases the amount of fat in the blood, probably by preventing the changes necessary to the complete digestion or assimilation of fat. In consequence of this surplus of free fat in the blood, fatty degeneration of the heart, vessels, liver, kidneys, and in fact of every part of the body, is induced, the fat particles being deposited in these various organs in place of their proper tissue.

It may be further objected that these changes do not occur unless very large quantities of alcohol are used. This, again, is an error. Dr. Carpenter is authority for the assertion that the changes in the corpuscles and in the fibrine of the blood take place when *not more than one part of alcohol to five hundred of blood is employed*. Thus it will be seen that the very weakest wines are unsafe, since none of them contain less than from three to five per cent. Even small beer would be capable of doing mischief in this way.

18.—A Drunkard's Heart.—When alcohol is taken into the blood, it soon comes in contact with the nerve centers which govern the action of the heart. Its effect is the same as upon the other nerve centers. It paralyzes them, just as chloroform does the brain. Then the heart is like a steam engine without a governor, or a clock from which the pendulum weight has been removed. It runs down with wonderful

rapidity. This effect is largely due, also, to the influence of alcohol upon the small blood-vessels. The nerves which control them become paralyzed, and they become dilated or relaxed, and so afford less resistance to the action of the heart, allowing it to beat too rapidly. This increased action is most unfortunately mistaken for increase of strength on the part of the organ, when it is mere increase of action,—*wasted force*. The amount of extra work done by the heart under the influence of liquor may be readily estimated. Dr. Parkes, by a series of careful experiments, found that the pulse of a man whose heart beat about 74 times a minute, or 106,000 times in twenty-four hours, when drinking only water, was, when under the influence of one ounce of alcohol per day, compelled to beat 430 times more in a day. Two ounces of alcohol per day caused an increase of 1,872 beats a day. Four ounces required 12,960 extra beats. Six ounces drove the pulse up to 18,432 extra beats; and eight ounces, to 25,488 unnecessary beats, or more than one quarter more than when taking only water.

Assuming ten pounds as the actual amount of force expended at each beat, we may readily ascertain the amount of force wasted through the increased action of the heart by different quantities of alcohol. Thus, one ounce of alcohol, with 430 extra beats, caused a waste of



4,300 pounds of force ; that is, of force equivalent to that expended in lifting 4,300 pounds one foot high in a minute. When two ounces were employed, the wasted force was 18,720 pounds, etc. With eight ounces of alcohol, the force wasted was 254,880 pounds, or more than 127 tons extra. When we consider how much labor would be required to lift 127 tons of coal a foot high, or one tenth of that amount ten feet high, the result seems almost incredible ; but there is neither reason nor opportunity for doubting the fact.

Dr. Parkes observed that after the conclusion of the experiment, five or six days elapsed before the young man experimented upon recovered his natural condition, and the alcohol was fully eliminated, the heart in the meantime remaining weaker than natural, as shown by the sphygmograph.

When alcohol is taken into the blood, it soon comes in contact with the nerve centers which govern the action of the heart. Its effect is the same as upon other nerve centers. It paralyzes them, just as chloroform does the brain.

In addition to this, the fatty particles which are so abundant in the blood of a spirit drinker, are deposited in the walls of the heart in place of the muscular tissues which should compose them. The walls are thus weakened, and are liable at any time to rupture. It is a fact

well known to physicians that this is one of the most common causes of heart disease.

19.—The Drunkard's Brain.—The brain, when healthy, is so soft that it would not retain its shape but for the skull. The sharpest knife is required to cut it without mangling its structure. It is necessary to immerse the organ in alcohol for weeks or months in order to harden it, when a careful examination is essential. A drunkard's brain presents a marked contrast. It is already hardened,—pickled almost. In the dissecting room, it affords rare pleasure to a medical student to secure the desiccated brain of an old toper. A celebrated anatomist declared that he could tell a drunkard's brain in the dark, by the sense of touch alone. A London physician reported a case in which he found, upon a *post-mortem* examination, so strong an odor of alcohol emanating from the brain, that he applied a match to it, when it burst into a flame. The quantity of alcohol in the brain is sometimes so great that it can be collected by distillation, after death.

20.—Alcoholic Apoplexy.—The intense congestion of the brain induced by alcohol, is the very condition in which apoplexy or rupture of a blood-vessel, is most likely to occur. When the walls of the arteries have been weakened by fatty degeneration, as already explained, the danger is increased many fold. A peculiar con-



dition of the eye, known as the *arcus senilis*, is often observed in drunkards. This condition acquires its name from the fact that it is often present in elderly people, in consequence of the degeneration which naturally occurs in old age. The ring is occasioned by a deposit of fat within the upper edge of the cornea, and is often present in persons addicted to the use of alcohol at a much earlier period than it should naturally make its appearance. Although it does not in the least injure the eye, its significance is very great, since it indicates that the deposit of fat by which it is produced, is taking place in other parts of the body, as the brain, the heart, the blood-vessels, the liver, and other important vital organs. It is a sign hung out in the drunkard's eye to warn others of the havoc which is being made within.

It has been claimed that old persons require alcohol on account of the diminished activity of their vital functions. The facts above stated show clearly that in old age the danger of injury from the use of alcoholic drinks is very greatly increased.

21.—A Toddy Blossom.—One of the signs of intemperance which its victims put forth the most strenuous efforts to suppress, is that peculiar enlargement of the nose, with intense redness, so appropriately termed the “rum blossom.” Like the drunkard's ring, the rum blossom, al-

though something of a blemish, is chiefly important in consequence of its significance, since it does not particularly interfere with the functions of the organ to which it is attached.

22.—The Whisky Flush.—The local blood supply of the body is regulated by means of special nerves which follow the blood-vessels from the heart to their minutest distribution. One of the effects of alcohol is to paralyze the centers in which these nerves originate, the result of which is that the vessels become unnaturally dilated, allowing too much blood to enter various parts, thus occasioning congestions and even inflammations. In this way the lungs, liver, heart, or any other part of the body may become diseased. It is this which causes the drunkard's face to flush; and not only the face but the whole body, the brain, the liver, every vital organ, is in a state of congestion. Is it any wonder that the toper feels depressed and enervated, and in need of a "pick me up" the next morning after a debauch, or that he falls so easily a victim to causes of disease which others escape?

It was long ago observed that drunkards are the favorite victims of cholera, the plague, sun-stroke, and other causes of speedy death. The system is prepared by the paralyzing influence of the drug, for almost any form of malady to which human flesh is heir.



23.—Alcoholized Nerves.—Who has not observed the trembling, unsteady hand of the man who has long been accustomed to the use of alcoholic liquors? Often the shaking member deposits a share of his poisonous drams upon the ground. If he is a mechanic, he cannot resume his work without a strong toddy to steady his hand; if an accountant, he must have a glass to clear his head. The condition, at first temporary, finally becomes permanent, and thus hopeless disease may originate.

Alcoholic insomnia is a frequent form of nervous disturbance induced by drink. While alcohol at first acts in many persons as a soporific, its final effects are to produce inability to sleep; or, if sleep is not wholly broken, a disturbed, unnatural, unrefreshing state of unconsciousness, hardly worthy of being called sleep, is induced. In natural sleep, the supply of blood to the brain is greatly diminished, only a sufficient amount of the nutritive fluid circulating in the arteries to carry on the reparative work of the brain. Unconsciousness is due to this fact. A state of unconsciousness may also be produced by extreme congestion of the brain, a condition closely allied to that which just precedes apoplexy. This is the sleep of the drunkard.

Partial or general paralysis, locomotor ataxia, epilepsy, and a host of other nervous disorders, are directly traceable to the use of alcohol.

24.—The Drunkard's Stomach.—A microscopical examination of the lining membrane of the stomach shows it to be traversed by a dense network of blood-vessels, which are wholly invisible so long as the organ remains in a healthy condition. Little pockets are also found in which are located the peptic glands which form the gastric juice, the essential agent in the process of stomach digestion. In the small intestine below the stomach we have a similar arrangement of blood-vessels and glands.

In the well-known case of Alexis St. Martin, who suffered from a gun-shot wound which carried away a considerable portion of the abdominal wall and penetrated his stomach, leaving an opening after healing, Dr. Beaumont made some most interesting experiments regarding the effects of alcohol upon the stomach, with the following results :—

Stomach of a Moderate Drinker.—The effect of alcohol, as well as of mustard, pepper, pepper-sauce, spices, and condiments, is to produce a state of excitement and irritation in the stomach, the result of which, when frequently repeated, is permanent congestion, and is the cause of numerous forms of dyspepsia. But alcohol does more than simply irritate the stomach. By its antiseptic influence it prevents the digestion of the food, and by its chemical properties it

destroys the activity of the gastric juice, and so does triple mischief.

Stomach of a Hard Drinker.—In the hard drinker the blood-vessels are dilated, as in the case of the moderate drinker, and in addition small ulcers are seen scattered over the diseased surface. The stomach of an old toper may be in an ulcerated condition without his being conscious of the fact, as the nerves of the stomach are so paralyzed by alcohol that their normal sensibility is quite lost.

The Stomach in Delirium Tremens.—In a person suffering with what is generally known as "delirium tremens," or acute alcoholism, the mucous lining of the stomach is in a state of intense inflammation, so that its functions are wholly suspended. Dr. Beaumont observed on one occasion, when Alexis St. Martin had been drinking heavily for a few days, that, although his stomach was in a state of inflammation and ulceration, he was unconscious of pain and felt no inconvenience, only suffering from a severe headache. Post-mortem examinations of persons who have died of delirium tremens usually disclose the stomach black with mortification.

25.—Drunkard's Dyspepsia.—A drunkard is certain to become a dyspeptic. Alcohol tans the stomach, rendering it inactive, and causing atrophy of the glands which form the gastric

juice. The supply of this digestive fluid is thus diminished. Alcohol precipitates the pepsin from the gastric juice, and so renders useless that which is secreted. Digestion cannot progress while alcohol is in the stomach, being delayed until the poison can be absorbed.

26.—Alcoholic Insanity.—The condition of a man under the influence of liquor is precisely that of an insane man, as regards his mind. When getting drunk is frequently repeated, the condition of the mind induced by drink may become permanent, making the individual a fit subject for an insane asylum.

Intemperance, more than any other cause, fills our lunatic and idiotic asylums. According to the statistics of insanity in France, thirty-four per cent of the cases of lunacy among males were due to intemperance. One half of the inmates of the Dublin insane asylum owe their disease to the use of liquor. Lord Shaftesbury, chairman of the English Commission on Lunacy, in his report to Parliament, stated that six out of every ten lunatics in the asylums were made such by alcohol.

27.—A Drunkard's Liver.—The appearance of a drunkard's liver is characteristic. "Hob-nailed liver" is another name for the diseased organ as found in spirit-drinkers. It is shrunk, hard, and almost totally useless, benumbed alike to pain and to proper sensibil-

ity. Externally it looks like the hob-nailed sole of an English cartman's shoe, from which resemblance it received its name.

This kind of liver is found in those who have freely indulged in drink for several years. The livers of more moderate drinkers are found filled with fat.

These derangements of the liver give rise to numerous other disturbances, of which abdominal dropsy is one common form.

Diabetes, a very fatal malady, especially in spirit-drinkers, is a peculiar disease which is generally caused by some of these derangements of the liver.

Fatty liver, in which the organ sometimes becomes enormously enlarged and changed to fat, and nutmeg degeneration, in which it comes to resemble the smooth surface of a half-grated nutmeg, are also among the common effects of alcohol upon habitual users of the poison.

28.—“Bitters” and “Biliousness.”—An immense quantity of filthy compounds of bitter extracts and bad whisky or crude alcohol is annually consumed, much being swallowed even by people who profess to be total abstainers. The chief active ingredient in most of these nostrums is alcohol. Without this ingredient, they would soon cease to be popular.

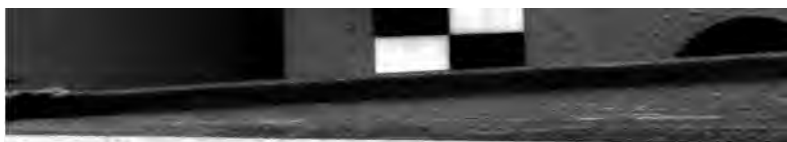
29.—Beer and Bright's Disease.—The idea that beer is harmless because it contains but a

small proportion of alcohol, has been wholly refuted by the observation that Bright's disease and other maladies of the kidneys are far more frequent among beer-drinkers than among any other class of persons. The excessive amount of work imposed upon the kidneys by the use of the large quantities of beer generally indulged in by those addicted to its use, sooner or later results in congestion, from which there is but a short step to acute or chronic inflammation.

30.—Drunkard's Dropsy.—The bloated features of the sot indicate too plainly for mistake the dropsical tendency of the alcohol habit; and the ultimate effects of the poison upon the liver and kidneys, as already described, lay the foundation for one of the most incurable of all the forms of dropsy. We have seen many cases of dropsy induced in this way, and recovery, even under the most favorable circumstances, has been very rare indeed.

31.—Alcoholic Consumption.—Dr. Richardson points out the fact that alcohol, instead of preventing, actually produces consumption, and that of a most fatal type. He states that a person suffering from alcoholic phthisis shows no improvement under treatment. The disease, steadily, surely, and usually quite rapidly, progresses to a fatal termination.

32.—Alcohol vs. Strength.—The laborer, the traveler, and the soldier use alcohol under



the delusion that it strengthens. When fatigued, the laborer takes a glass of grog and *feels* better, or thinks he does. He imagines himself stronger. His increased strength, however, is wholly a matter of the imagination.

The use of alcohol makes a man *feel* stronger—makes him believe that he can do more work, endure more fatigue and hardship, and withstand a greater degree of cold than he could without it; but when an actual trial is made, it soon becomes apparent that the ability is lacking. Numerous experiments have shown that alcohol decreases muscular strength. Says Dr. Brinton, "The smallest quantity takes somewhat from the strength of the muscles." Says Dr. Edmunds, of London, "A stimulant is that which gets strength out of a man."

33.—Alcoholized Muscles.—Among the other degenerations produced by alcohol, fatty degeneration of the muscles should be mentioned. This degeneration consists in a change of the proper muscular tissue to fat. The process may involve all the muscles of the body, or simply a few, as those of the heart and blood-vessels. It is an injury which can be in no way repaired, and must inevitably end in death.

34.—Stimulation not Strength.—If by a stimulant we are to understand something which imparts force to the body when weakened by disease, then it is evident that alcohol can be

of no service in this direction ; for, as already shown, it is incapable of supplying force, undergoing no change in the body. All force arises from changes in matter. The forces manifested by the living system are the result of vital changes occurring in its tissues.

If by a stimulant is meant something which *excites* nervous action, which calls out the manifestation of force, then alcohol is certainly a stimulant. And it is in this sense only that it is a stimulant. The lash is a stimulant to a tired horse. It does not increase his force, or make him any less tired. It only compels him to use a little more of his already depleted strength.

35.—Alcohol vs. Animal Heat.—The sensation of warmth produced by taking a glass of wine or brandy is delusive. The circulation is unbalanced, and for a few moments there is a seeming increase of heat ; but the thermometer shows that the temperature is lessened. Says Dr. Parkes, the eminent English sanitarian, "All observers condemn the use of spirits, and even of wine or beer, as a preventive against cold." The names of Dr. King, Dr. Kane, Captain Kennedy, and Dr. Hayes, may be cited as holding to this opinion. In the last expedition in search of Sir John Franklin, the whole crew were teetotalers.

Prof. Miller states that the Russian military



authorities "interdict its use absolutely in the army *when troops are about to move under extreme cold*,—part of the duty of the corporals being to smell carefully the breath of each man on the morning parade, and to turn back from the march those who have indulged in spirits, it having been found that such men are peculiarly subject to be frost-bitten and otherwise injured."

Dr. Carpenter is authority for the statement that the Hudson's Bay Company have for many years entirely excluded spirits from the fur countries to the north, over which they have exclusive control, "to the great improvement," as Sir John Richardson states, "of the health and morals of their Canadian servants, and of the Indian tribes."

36.—Alcohol vs. Mental Power.—Thousands of editors, lawyers, students, authors, and even clergymen, keep beside their midnight lamps a bottle of wine or brandy, and consider one as indispensable as the other. They imagine that with the frequent drams they quaff from that green bottle, they imbibe an increase of mental vigor. Thousands of lecturers, orators, and ministers, sip a glass of sparkling poison just before they step upon the platform. The first imagines that alcohol is necessary to enliven his energies and sharpen his memory. The second relies upon alcohol to burnish his eloquence. The third depends upon the poi-

sonous beverage to quicken his pious zeal, intensify his fervor, and lend him inspiration for the duties of his office. We might justly dwell upon the absurdity of such practices, and well question the efficiency of a gospel shrouded with the fumes of alcohol.

37.—Alcohol a General Disturber in the Vital Economy.—Close upon the derangement of the stomach which is certain to come sooner or later with all drinkers, follows nearly every other functional disease possible to the human system. Every organ is disturbed. The whole vital machinery is deranged. Strange noises are heard in the head, occasioned by the rushing of the hot torrent of poisoned blood through the distended blood-vessels which pass near the ear. Black spots and cobweb appearances annoy the sight. Alcoholic amaurosis or amblyopia comes on, and sight becomes impaired; sometimes blindness follows. The dilated blood-vessels of the skin become permanently enlarged, especially in the face and nose, and the drinker gets a rum blossom. Skin diseases of various sorts are likely to appear, particularly eczema of the fingers or toes, or on the shins. An unquenchable thirst seems to be ever consuming the blood, and nothing but alcohol will even temporarily assuage the desire for drink.

The liver and kidneys are disturbed in their



functions, one day being almost totally inactive through congestion, and the next rallying to their work and doing double duty. Every organ feels the effect of the abuse through indulgence in alcohol, and no function is left undisturbed. By degrees, disordered function, through long continuance of the disturbance, induces tissue change. The imperfectly repaired organs suffer more and more in structure, until the most extensive and disastrous changes have taken place.

38.—Alcohol vs. Longevity.—It is very easy to prove that the influence of alcohol, as of every other poison, is to shorten life. Dr. Willard Parker, of New York, shows from statistics that for every ten temperate persons who die between the ages of twenty-one and thirty, fifty-one intemperate persons die. Thus it appears that the mortality of liquor-users is *five hundred per cent greater* than that of temperate persons. These statements were based on the tables used by life-insurance companies.

Notwithstanding the constant protest of both moderate and immoderate drinkers that alcohol does not harm them, that it is a necessary stimulus, a preventive of fevers, colds, consumption, etc., and the assertion of certain scientists that it is a conservative agent, preventing waste and so prolonging life, the distinguished English actuary, Mr. Neison; has shown from statistical

data which cannot be controverted, that while the temperate man has at twenty years of age an average chance of living forty-four and one fifth years, the drinking man has a prospect of only fifteen and one half years of life. At thirty years of age, the temperate man may expect to live thirty-six and one half years, while the dram-drinker will be pretty certain to die in less than fourteen years.

39. — Moderate Drinking, Mild Poisoning.
—Moderate drinkers do not escape. "Chronic alcoholism" is the disease which fastens upon them, and its symptoms are as distinct as those of any other disease. Gout and rheumatism are the special patrons of the moderate toppers, the wine-bibbers. Neuralgia is another comforter of small tipplers. General nervous debility and dyspepsia also find a great proportion of this class among their victims.

It is quite useless for moderate drinkers to suppose that by using alcohol in small quantities they escape its evil effects. It is a poison in all doses. As Dr. Smith says, "In whatever dose, the direction of the action of the alcohol must be the same."

Says Dr. Chambers, "The action of frequent divided drams is to produce the *greatest amount of harm* of which alcohol is capable, with the least amount of good."

The effect of the constant action of a small



quantity of the poison is far greater than that of excessive, but only occasional, quantities. Hence the habitual moderate drinker, even of wine, beer, or hard cider, is much more subject to chronic nervous disorders and degenerations of various sorts, than the man who goes on a spree once in two or three months.

40.—The Entailments of Alcohol.—The drinker himself is not the only sufferer from his vice. Indeed, it seems in many cases that he is not the greatest sufferer. He may even live out his threescore years and ten, in apparent defiance of the laws of nature and the warnings of friends; but look at his children. Are they as strong and robust as he?—Oh! no; instead, we often see them frail, nervous, imbecile, idiotic,—poor specimens of the race. The iniquities of the father are visited upon the children.

Dr. S. G. Howe attributed one half of the cases of idiocy in the State of Massachusetts to intemperance, and he is sustained in his opinion by the most reliable authorities. Dr. Howe states that there were seven idiots in one family where both parents were drunkards. One half of the idiots in England are of drunken parentage, and the same is true of Sweden, and probably of most European countries. It is said that in St. Petersburg most of the idiots come of drunken parents.

Ten Scientific Arguments Against Tobacco-Using.

1.—The Custom is a Barbarous One.—This statement is true, both as regards its character and its origin. In the month of November, 1492, when Columbus discovered the island of Cuba, he sent two sailors to explore it, who reported, when they returned, among many other strange and curious discoveries, that the natives carried with them lighted fire-brands, and puffed smoke from their mouths and noses, which they supposed to be the way the savages had of perfuming themselves. They afterward declared that they "saw the naked savages twist large leaves together, and smoke like devils."

2.—It is a Deadly Poison.—The active principle of tobacco, that is, that to which its narcotic and poisonous properties are due, is *nicotine*, a heavy, oily substance which may be separated from the dried leaf of the plant by distillation or infusion. The proportion of nicotine varies from two to eight per cent, Kentucky and Virginia tobacco usually containing six or seven per cent. A pound of tobacco contains, on an average, three hundred and eighty grains of this deadly poison, of which one tenth of a grain will kill a dog in three minutes. A

case is on record in which a man was killed in thirty seconds, by this poison.

The poison contained in a single pound of tobacco is sufficient to kill three hundred men, if taken in such a way as to secure its full effect. A single cigar contains poison enough to extinguish two human lives, if taken at once.

3.—Effects of Tobacco on the Blood.—When taken in any form, tobacco very readily finds its way into the blood, and, according to Dr. B. W. Richardson, it produces in the vital fluid very serious changes. He describes these changes in the following graphic words:—

“On the blood, the prolonged inhalation of tobacco produces changes which are very marked in character. The fluid is thinner than is natural, and in extreme cases paler. In some instances the deficient color of the blood is communicated to the body altogether, rendering the external surface yellowish-white and puffy. The blood, being thin, also exudes too freely, and a cut surface bleeds for a long time, and may continue to bleed inconveniently, even in opposition to remedies. But the most important influence is exerted over those little bodies which float in myriads in the blood and are known as the red corpuscles. These bodies have naturally a double concave surface, and at their edges a perfectly smooth outline. The absorption of

fumes of tobacco necessarily leads to rapid changes in them; they lose their round shape, becoming oval and irregular; and instead of having a mutual attraction for each other and running together, a good sign of physical health, they lie loosely scattered before the eye, and indicate to the learned observer, as clearly as though they spoke to him and said the words, that the man from whom they were taken is physically depressed and deplorably deficient both in muscular and mental power."

4.—Smokers' Sore Throat.—The redness and dryness of the mucous lining of the mouth and throat so common with smokers, is the result of the direct irritation of the hot fumes of the poisonous weed, which are drawn in through the pipe or cigar. This cause of chronic disease of the throat is so very common that "smokers' sore throat" has come to be recognized as a distinct malady. Some smokers pretend to smoke for the cure of throat difficulties; but the excuse is a mere pretense in most cases. Tobacco never cures sore throat. It may temporarily relieve local irritation, but can do no more, and always increases the disease.

5.—Smokers' Heart.—The effect of tobacco upon the heart is indicated by the pulse, which is a most accurate index to the condition of the heart. The pulse of a tobacco-user says, in terms as plain as any words could, that his

heart is partly paralyzed, that its force and vigor are diminished, that it is, in fact, poisoned. Medical statistics show that about one in every four smokers has this condition. There is good evidence for believing that not only functional but organic disease of the heart may be occasioned by the use of tobacco.

6.—Smokers' Cancer.—There is no chance to doubt that tobacco-using is often a cause of this terrible disease. All eminent surgeons testify that they frequently meet cases of cancer of the lip and tongue which have been occasioned by smoking. In the great hospitals of this country and Europe, we have seen many cases of smokers' cancer, besides a number which we have met in our own practice.

7.—Tobacco-Users' Dyspepsia.—Tobacco is a narcotic. The effect of narcotics generally is to lessen the secretion of gastric juice, and to decrease the activity of the stomach. Tobacco does this in a very marked degree. A man who is hungry may appease his desire for food by using tobacco, if he is accustomed to it, or by the employment of some other narcotic. The desire is appeased, although the need still exists. It is through this same paralyzing influence that tobacco impairs digestion.

8. — Nicotinized Nerves.—Tobacco-users suffer much from nervousness, which is manifested in a great variety of ways. One person is

easily startled, another is unnaturally irritable, is cross and irascible ; another cannot sleep at night ; still another suffers with trembling of the hands, which greatly discommodes him in writing.

We have often known women and young children to suffer very severely from various nervous disorders which were wholly due to the effect upon their delicate organizations of the poisonous fumes of tobacco which they received through the poison-laden exhalations of their smoking husbands and fathers.

9.—Tobacco Paralysis.—In the last thirty years, there has been a great increase in the frequency of the occurrence of a peculiar form of paralysis which seems to affect especially the nerves that supply the muscles, causing gradual wasting and loss of muscular power, which is fairly attributable to the increasing use of tobacco, as it most often occurs in tobacco-users.

A form of progressive paralysis of the optic nerve, causing “tobacco amaurosis,” or blindness, is well recognized by oculists. These cases generally recover when tobacco is discontinued, but will not get well so long as it is used.

Tobacco-blindness is very common in Ireland, where very strong tobacco is used. It is caused both by smoking and chewing.

Color-blindness, an affection which is in-

creasing to an alarming extent, especially in Belgium and Germany, where smoking is more extensively practiced even than in this country, has been found to be largely attributable to the use of tobacco. This fact was first made known by an eminent Belgian physician who made extensive investigations upon the subject at the request of the Belgian Government.

10.—The Tobacco Legacy.—There is no vice or habit to which men are addicted, the results of which are more certainly transmitted to posterity than are those of tobacco-using. A vigorous man may use tobacco all his life, and be able to convince himself all the time that he is receiving no injury; but the children of that man, who ought to inherit from him a vigorous constitution and high health, are robbed of their rightful patrimony instead, and enter upon life with a weakly vital organism, with a system predisposed to disease and destined to premature decay.

The Stimulant Habit.—Our war against alcohol and other stimulants is not based upon the specific influence of alcohol, tobacco, tea, coffee, or opium, but upon the fact that these substances are all artificial stimulants,—that is, by their use the body is harmed, and the vital power is weakened by the consumption of en-

ergy which is not in any way reinforced by the substance employed. There are many other substances besides those named above which possess this same property, such as hashish, Siberian fungus, strychnia, and arsenic. Dr. Norman Kerr, in a recent article, records cases which have come under his own observations, in which persons have taken from ten to fifteen grains of arsenic, and claimed to have been improved by it. According to Dr. Kerr, ladies swallow arsenic to improve their personal appearance, and also use it externally for the complexion. Gentlemen are also addicted to this practice, and both sexes take arsenic as a fillip and general tonic. Nor is the habit confined to the wealthy. On one occasion, while crossing a ferry, Dr. Kerr saw a boatman rest on his oars and take a drink out of a pocket-flask. The beverage was a preparation of arsenic, and the dose was enough to kill any four average men.

The Effects of Alcohol on Digestion.—Prof. Kochlakoff, of St. Petersburg, recently experimented on five healthy persons, aged from twenty to twenty-four years, with reference to the effects of alcohol upon digestion. Ten minutes before each meal, each person was given about three ounces of alcoholic liquor, containing from five to fifty per cent of alcohol, about

the proportion found in ordinary liquors. The following results were obtained :—

“1. Under the influence of alcohol, the acidity of the gastric juice, the quantity of hydrochloric acid, as well as the digestive power of the gastric juice are diminished.

“2. This enfeebling of the digestion is especially pronounced in persons unaccustomed to the use of alcohol.

“3. With increase of concentration (the quantity of alcohol remaining the same) of the alcoholic beverage, the digestive power of the gastric juice still further diminishes.

“4. From the fourth hour of the digestion, the digestive power of the gastric juice increases notably. The acidity of the gastric juice and the quantity of hydrochloric acid are doubled.

“5. Under the influence of alcohol, the secretion of gastric juice is more abundant and continues longer than ordinarily.

“6. The movements of the stomach are equally diminished, and especially so the greater the concentration of alcohol.”

Dr. Figg, of Edinburg, made the following experiments, to test the effect of alcohol upon digestion. He fed two dogs equal quantities of roast mutton. He then administered to one dog, by passing a tube into the stomach, an ounce and a quarter of alcohol. After five hours, both dogs were killed and examined. The one which

had taken no alcohol was found to have digested his meal entirely, whereas digestion had scarcely begun in the animal to which alcohol had been administered.

Disorders Induced by Wine-Tasting.—According to a German medical journal, Drs. Donnet and Marandon, who have made exhaustive studies of the diseases of wine-tasters, find that the latter frequently suffer from disturbances similar to alcoholism, although the claret-tasters do not swallow the wine, but on the contrary, reject it, and even rinse their mouths afterward. In one case of Dr. Donnet's, a man thirty-two years old used to taste, every day, thirty or forty samples of wine, occasionally liquors and rum, without ever swallowing any part of them. After two years he became very excitable, lost his appetite, did not sleep well, and suffered with disturbance of sensibility, pains in the breast, a feeling of weakness, difficulty in breathing. He improved after abandoning his profession, although a nervous debility still remained, noticeable by the facility with which he was set in tears.

Another statement made by Dr. Donnet, is that there are a great number of apoplexies in Bordeaux, where many persons drink one and a half litres of wine with each meal. This number exceeds the number of apoplexies in any other city of the world. Dr. Marandon did not no-

tice any symptoms of intoxication in Burgundy tasters, although some of them would swallow the samples. He remarks that tea-tasters always swallow some tea, and this, he says, explains the nervous symptoms they are affected with.

Wine-tasters must certainly be considered as moderate drinkers, although they swallow very little of the wine ; and hence the study of the physical condition of wine-tasters evidently has a very important bearing upon the question of moderate drinking. The accumulation of evidence against the use of alcoholic liquors, either moderately or immoderately, has become so great that it would seem that no ground whatever is left for those who still attempt to maintain their use upon scientific principles.

Killed by Bitters.—A small boy, the son of a saloon-keeper of Detroit, was recently killed by a dose of "Dr. Harter's Wild Cherry Bitters." These bitters, like other nostrums of the same sort, are chiefly composed of alcohol flavored with some bitter substance. The saloon-keeper kept the bitters in stock, presumably for the benefit of those of his customers who consider it less sinful to swallow bad whisky flavored with bitters than to take their whisky straight. He took a bottle home, and deposited it in the family cupboard, without a stopper. The little boy helped himself to a drink from the bottle,

and as the result, he shortly afterward was found by a physician dead drunk, and died in convulsions a few hours later.

A Hint to Smokers.—A celebrated European specialist has recently called attention to the fact that consumption is becoming exceedingly prevalent among cigar smokers. The reason for this is evident. The fact that persons of feeble or diseased constitution are frequently employed in the manufacture of cigars, coupled with the enforced confinement in a close and foul atmosphere, renders this class of laborers especially liable to consumption. It is not an uncommon thing to see two or three loud consumptives in a single cigar factory. Of course the mouth and lips are constantly soiled with the expectorated matter, and when the cigar-maker puts on the finishing touch to the cigar, by moistening it with his lips, he infects it, and the man who smokes the cigar thereby becomes vaccinated with the disease. It might, perhaps, not be a matter to be so greatly regretted that the race of cigar-smokers should be killed off, although it must be admitted that, through ignorance, many excellent men are addicted to the practice ; but the non-users of cigars are interested in this matter almost as much as those who smoke, for the reason that the person suffering from consumption will be a source of infection to others. We

have, in more than one instance, been able to trace consumption in a wife to the care of a consumptive husband, and thus the smoking husband might easily infect an innocent and unoffending wife, from whom the disease might in turn be communicated to innocent children. Cigar-smoking must be regarded as one of the most dangerous, as well as one of the most loathsome, practices tolerated among civilized people.

Intoxication from the Use of Tea.—A scientific physician of our acquaintance recently related to us the circumstances of an epidemic of tea-drunkenness, which came to his attention a number of years ago. At that time he had medical charge of the employees of a large manufacturing establishment in which forty or fifty young women were employed. It was observed by the managers that the young women were growing thin and haggard, and after a while they began to drop out from their work, sometimes several at a time, and were likely at any time to be seized with strange nervous symptoms, usually hysterical in character, sometimes amounting to insanity. An investigation of the matter showed that these young women had acquired the habit of tea-chewing while engaged in their work. The practice had become almost universal among them, and the evil effects were as universal as the practice. A number of cases of

acute mania occurred among the young women before the practice was checked, which was only accomplished by stationing detectives at the door of the factory, and searching each person who entered. Quantities of the intoxicating drug were frequently thus found concealed. Another physician recently mentioned a case of genuine delirium tremens resulting from the use of tea, which came under his observation nearly fifty years ago. The patient gave all the characteristic symptoms, seeing all sorts of animal forms, and other shapes which are described by the victim of *mania a potu*.

SIMPLE REMEDIES

For Common Diseases.

MANY of the cases of illness which are constantly occurring in nearly every family, are of such character that they can as well be treated by an intelligent, well-informed mother, as by a physician. Important cases demand medical advice, but every parent ought to be sufficiently well informed to be able to attend promptly and efficiently to the great majority of the ailments to which all families are liable. Such information as is given in this work, will also enable a mother to render efficient aid to the physician in cases of grave illness, in which as much often depends upon good nursing as upon medical advice.

If children are properly clothed and fed, allowed plenty of exercise, fresh air, and sleep, they will be seldom ill. The same is equally true of grown people. Accidents, exposures, and indiscretions will occur, however, resulting in various ailments. If the simple directions given for treating some of the more common ailments, are carefully followed, much trouble, expense, and suffering may be avoided. Few drugs are recommended for internal use, because the cases

in which they are really needed are such as require the personal attention of a physician.

Hygienic Agencies.—Nature has not provided agents by the use of which the penalty of transgression of her laws may be evaded; but there are certain natural agents, the proper employment of which will preserve health. If a person becomes diseased by neglecting to thus use these health-promoting agents, the only proper, and the most efficient, way in which to recover from disease is to begin at once to do that which has been neglected. Thus it is that those agencies which are promotive of health and life become remedies for disease.

As might be supposed from the foregoing, the most potent remedies must be those agents which are the most essential to the maintenance of life and health. Among these, the following are the chief: *Air, water, food, clothing, exercise, rest, cheerfulness, sunlight, and electricity.*

Air.—Pure air is the first and the last desideratum of human life. Individual life begins with the first breath, and ends with the last act of respiration. A human being lives largely in proportion as he breathes. Frogs and lizards are sluggish because they breathe little. Birds are more vigorous in their movements because of the wondrous capacity and activity of their lungs. So with human beings. Need we suggest that those feeble-minded creatures who em-

ulate each other in compression of the waist—thus curtailing their breathing power—are like frogs and lizards in their capacity for appreciating the “joy of living”? or that their organs of cerebration may be as small as their waists? Has a man consumption? Let him live in the open air; he cannot breathe too much. Thousands of patients die in hospitals for want of fresh air. God’s oxygen is the best tonic known. Fill the sick-room with it; the patient’s chances for recovery will be thereby increased fourfold. Its disinfectant and deodorizing properties are unsurpassed. All it requires is unrestrained action.

Water.—This limpid fluid constitutes three fourths of the whole weight of the human body. The brain, the organ of thought, contains a still larger proportion. Its value as a curative agent is in direct ratio to its importance in the structure of the body. Water is valuable, (1.) To dilute the blood, being the *only* drink; (2.) To cleanse the body from impurities within and without; (3.) As the most efficient means of applying heat and cold in the various forms of baths. Nothing relieves thirst like water. Nothing will regulate the temperature of a fever patient so effectually as water applied in the form of a cool pack. In relieving the coma of narcotic poisoning, apoplexy, sun-stroke, and lightning stroke, cold affusion is more potent

than all other remedies combined. No salve, liniment, plaster, ointment, or medicated lotion is equal to pure soft water as a dressing for wounds. Water—hot, warm, tepid, cool, cold, or iced—is useful at the appropriate time.

Food.—"As a man eateth, so is he." A loaf of bread, eaten, digested, assimilated, becomes flesh. A pound of pork, put through the same process, also becomes flesh. The first becomes pure, healthy flesh; the second becomes gross, diseased flesh. Lord Byron appreciated this fact when he declared that he "felt himself grow savage" whenever he partook largely of animal food. If a man has filled himself with grossness, so that his liver is clogged, his stomach and bowels torpid, all his vitals congested, and his life-current sluggish, the best and only remedy is to "mend his ways" at once, and adopt the diet which nature indicates is best. In this way thousands of wretched dyspeptics and hypochondriacs have sought and found their squandered health.

Clothing.—The absurdities of fashionable dress are too glaring to require exposure. All admit the need of reform, but few have moral courage to break Dame Fashion's shackles. To the pinioned, corseted, panniered, fettered, dragged-down, tied-back, gasping, dying daughter of Fashion, who would scarcely be conscious of living except for the aches, pains, nerves, neural-



gias, stifled sighs, palpitations, and hysterics which make up her wretched existence, what an emancipation is offered in a dress which clothes the body equably from head to toe, gives perfect liberty of action to every muscle, allows room for a deep inspiration and a vigorous heart-beat, removes from the hips those cumbrous, dragging weights, and unties the lower extremities!

Exercise.—Life is activity; stagnation is death. This is true everywhere. It is this alone that makes the difference between the sparkling brook and the slimy pool, the blooming flower and the withered shrub, the laborer's brawny arm and the student's flaccid muscle. Few men die of excessive brain-work; many die from lack of muscle-work. Proper exercise is a powerful remedial agent.

Rest.—During sleep is the time when Nature converts her workshop into a repair-shop, mending broken nerve fibers, replenishing wasted muscles, repairing tissue cells, and renovating worn-out particles. When the body is wasted by disease, how much of this work there is to be done! and how important that sleep be afforded as a prerequisite for its accomplishment!

Cheerfulness.—“Laugh and grow fat” is an old adage. *Laugh and get well* would be just as true. Indeed, the remedial power of a hearty

laugh is sometimes greater than that of any drug in the *materia medica* ; and its salutary effects have often saved the life of a failing patient. "A merry heart doeth good like a medicine" is good Bible hygiene.

Sunlight.—Sunshine paints the skies, colors the leaves, and tints the flowers. Under its genial influence all nature thrives. It surpasses all other agents in restoring a natural color to the blanched and ghostlike faces of long-housed invalids. Sun-baths are powerful remedies for disease, if rightly used.

Electricity.—This subtle agent, which flashes in the thunder cloud and quivers in a drop of dew, is equally potent for good or evil. When rightly used, its curative value is immense ; but it has fallen, unfortunately, almost entirely into the hands of quacks, who not only do much injury by injudicious applications, but bring disrepute upon it by claiming for it that which is palpably absurd, as that it is the "nervous fluid," "vital force," "life force," etc.

Colds.—Tommy, or Mary, or baby, or some other member of the family, has "caught a hard cold ;" what shall we do ? Do nothing, and let it wear off ?—No ; perhaps the patient will get well ; maybe the cold will become something worse.

Shall we give ginger tea, red pepper, brandy sling, onion sirup, honey and lard, fat pork,



castor-oil, licorice, hoarhound, molasses candy, boneset, catnip, mullen tea, or pennyroyal? or shall we apply a mustard plaster to the chest, a blister to the bottom of each foot, and fat pork with salt and pepper to the throat? Do no such thing. Such trash put into the stomach, with such irritating applications outside, would make a well person sick. Do this:—

In the first place, prevent the cold, if possible, by beginning in season. Perhaps the feet have been wet, and are damp and cold. Pull off the shoes or boots and stockings, and put the feet into a pail of water as hot as can well be borne, after first wetting the head with cool water. After fifteen minutes' soaking, pour a little cold water into the pail. Allow the feet to remain two or three minutes longer, then take out, wipe dry every part, between the toes and around the ankles, and then rub them until they glow with warmth. Put on dry, warm stockings, and send the patient to bed for an hour, or for all night if it is evening. Instead of waking up in the morning with a headache, a sore throat, and a voice like a cracked fiddle, he will be quite well.

If a person has really got a cold, and is sneezing, and wheezing, and coughing, and expectorating, more thorough measures must be taken:—

1. Eat little or nothing for a day or two. The popular adage, "Stuff a cold and starve a fever," is without foundation. A cold is a fever

—a *heat*, really, rather than a *cold*, if temperature be considered.

2. Rest. Sleep all that is possible. No time is lost in such a course. Timely rest may save serious illness.

3. Take some kind of hot bath, which will start the perspiration freely. Long sweating is debilitating; only start the action of the skin. The foot-bath combined with the sitz-bath, the wet-sheet pack, the vapor-bath, and the hot-air bath are alike suitable. These are severally described in this work. After the bath, go to bed.

Drink freely of water, the purer the better.

A day or two of such treatment will usually “break” the hardest cold, saving the patient several weeks of pain and annoyance, if not chronic disease. Try it. The trouble is less than you think, and the results are splendid.

Frequent bathing in tepid water makes a person less liable to colds.

Sore Throat.—There are many remedies for sore throat, some of which are harmless, being simply worthless,—like goose-oil applied externally,—while others are quite injurious. The remedy used by the Germans and many sensible Americans, is the best,—hot water. It should be applied outside and inside; outside by means of flannels wrung out of water as hot as can be borne, applied to the throat and well covered, twice a day, for fifteen minutes or half

an hour. Gargle hot water, as hot as can be borne, every fifteen minutes or half hour until relieved. Drink plenty of hot water, so as to get into a profuse perspiration. If there is fever, cool the skin with sponge-baths. Keep the feet warm. If there are symptoms of diphtheria, apply ice in a bag to the outside of the neck, and give the patient little pieces of ice to swallow. Lemon juice applied to the pharynx with a swab is sometimes a good remedy. A few hours of this treatment will effect a cure in simple cases.

Sneezing.—When suddenly seized with a desire to sneeze, place the finger upon the upper lip and press hard. Rubbing the nose vigorously will also suppress the paroxysm when it is desirable to do so. When the affection is caused by disease of the nasal cavity, it will not be so easily controlled. The inhalation of steam, and the warm or cold nasal douche, or gently drawing water into the nose, will frequently give material relief.

Hoarseness.—All the sirups, expectorants, cough mixtures, anodynes, and inhalations ever invented or advertised will not cure hoarseness. They may sometimes destroy the sensibility of the nerves of the diseased part, and so relieve the cough, but they cannot remove the disease. Honey, loaf-sugar, and all such articles are very deceptive remedies. Cough lozenges and candy,

troches, etc., are equally useless. They do not come in contact with the diseased surfaces, as many suppose. They pass directly down into the stomach, where they occasion much disturbance, disordering digestion, and so producing a disease really worse than the one they were intended to cure.

If the disease has not become chronic, it may usually be relieved by bathing the throat and neck in cool water, applying heat and cold alternately, and wearing a wet bandage around the neck at night. If the difficulty is of long standing, a physician's care is needed.

Cough.—Coughing, like vomiting, should be encouraged rather than restrained when there is anything which needs expulsion in that manner. Many consumptives have been suffocated by the sudden stopping of a cough which was merely an effort of nature to get rid of foul matter in the lungs. If there is no cause for the cough but irritation in the throat, it may be cured, in most cases, by the application of the wet bandage. Wear night and day, and change frequently. If the cough seems to have no sufficient cause, it may be concluded that it is of a purely nervous character. The force of will power is the best remedy. Resolve not to cough; engage the attention with something else, and forget it. Not a few cases of chronic cough are simply the result of habit. The eminent Dr.

Brown-Sequard once made the following suggestions about how to stop a cough: "Coughing can be stopped by pressing on the nerves of the lips in the neighborhood of the nose. A pressure there may prevent a cough when it is beginning. Sneezing may be stopped by the same mechanism. Pressing also in the neighborhood of the ear may stop coughing. Pressing very hard on the top of the mouth, inside, is also a means of stopping coughing. And, I may say, the will has immense power, too. There was a French surgeon who used to say whenever he entered the wards of the hospital, 'The first patient who coughs will be deprived of food to-day.' It was exceedingly rare that a patient coughed then."

Continuous coughing will produce irritation of itself. Frequent sips of cold water, and gargling cold water or a mixture of water and lemon juice, will often relieve a cough when it is due to irritation of the upper part of the windpipe. Wearing the wet bandage about the throat is an excellent remedy.

Hiccough.—This troublesome affection is usually caused by a disordered stomach. Get the stomach in good condition, and it will disappear. A few sips of cold water will often relieve it. Perhaps the best remedy is holding the breath and fixing the attention intently upon some object. Another specific is to moisten granulated

sugar with good vinegar, and take from a few grains to a teaspoonful. The effect is almost instantaneous, and the dose seldom needs to be repeated. It can be used for all ages—from infants of a few months old to those on the downhill side of life.

Croup.—If the child can speak aloud, the disease is of the spasmodic variety, and he will probably recover with a little attention ; but if he can only whisper, and the disease has come on somewhat gradually, it is a much more serious variety,—true croup,—and a physician should be called at once.

Apply, alternately, hot and cold cloths to the throat and neck for a half hour, then cold continuously for half an hour ; then foment again. Give a hot bath, and keep the limbs and extremities warm. Give no emetics, expectorants, stimulants, nor anodynes ; all are harmful. Goose-oil on the outside does no more good than ipecac inside. Give the child an abundance of fresh air. If the case is one of true croup, the inhalation of steam is one of the best remedies.

Pneumonia, or Lung Fever.—The greatest immediate danger in this disease is the depressing influence of the excessive heat upon the heart ; hence in this, as in most other acute diseases characterized by high fever, the most important measures of treatment are those which will reduce the fever. Of these, the cool bath,

the graduated bath, the sponge bath, the wet-sheet pack, and the cold enema are the most effective. Cool compresses alternated at intervals of two or three hours by hot fomentations for five or ten minutes, should be applied to the chest, particularly to the affected side, the seat of pain. The hot fomentations relieve the pain, and the cold compresses check the diseased process. The compresses should be wrung out of cold water and changed every five to eight minutes, or as often as they become warm. Care should be taken to keep the patient's body from being wet except where the treatment is applied.

When much chilliness is produced by the contact of water with the skin, the cold enema is a most admirably useful measure in controlling high temperature. The amount of water required is half a pint to a pint. The temperature may be forty to sixty degrees. Next in importance to the use of water in this disease, is the employment of fresh air. The apartment should be kept as cool as possible without discomfort. Abundance of fresh air should be continually supplied.

The diet of the patient should consist of milk, oatmeal gruel, ripe fruit, and similar easily digested food. No meat, eggs, or other stimulating food should be allowed.

La Grippe.—This disease is usually ushered in by a sensation of chilliness, and is followed

by a fever, accompanied by severe headache and pain and soreness in all parts of the body. The patient says that his back aches, his bones ache, his head aches, and he is generally wretched. The distress for twenty-four hours is generally very considerable. Sometimes the seat of pain is in the lungs, and occasionally pneumonia and pleurisy is a complication when it occurs in a severe form. In the great majority of cases, however, the affection of the lungs assumes no graver form than a slight sore throat or bronchitis.

At the outset of the disease, give the patient a hot blanket-pack, which is administered by wrapping closely in a woolen blanket wrung out of water as hot as can be borne. Allow the patient to sweat for an hour. This will lower the fever and afford relief from the severe soreness and pain in the bones. The pack may be repeated two or three times a day for the first day or two, if necessary. The patient should drink large quantities of hot water, at least one glass every hour. Fomentations or compresses should be applied to the chest, if there is a cough or bronchial irritation. The inhalation of steam by means of a steam-inhaler, is an excellent means of relieving the cough which sometimes accompanies this disease. The severe headache is generally relieved by a cold compress, sponging of the head with hot water, or

an application of hot fomentations to the upper part of the spine. The bowels should be opened by hot enema once or twice a day. If necessary, a mild laxative of some sort should be used, as the fluid extract of cascara, ten or fifteen drops at night and before breakfast. If the headache is not relieved by other means, ten or fifteen grains of bromide of potash may be administered once in three or four hours, in a quarter of a glassful of water. If medicines are to be administered, it is better to employ a competent physician than to undertake self-medication.

Acidity of the Stomach.—This condition is due to germs, and the cure lies in getting rid of the germs. Germs of fermentation in the stomach produce first alcohol, then carbonic acid, and then acetic acid. A person troubled with this form of dyspepsia should be careful to take only such articles of food as do not favor the development of germs, and thus starve them out. The worst articles are all fat foods, and sugar and all forms of sweets, including ice-cream and cake. Boiled milk and unfermented breads are excellent foods to take. Another thing to do is to wash the germs out of the stomach by drinking freely of hot water an hour before meals. If food is put into a stomach already sour, of course fermentation will be set up immediately. It is like straining new milk into

unwashed pans from which sour milk has been emptied. Some persons notice that just as soon as they eat, their stomach becomes sour. The third important thing to do is to stimulate the stomach to make more gastric juice, which is a natural antiseptic, and prevents fermentation and also hastens absorption. The glands may be stimulated by applying hot fomentations to the stomach for half an hour immediately after the close of a meal, or, easier still, by wearing a rubber bag filled with hot water, directly over the stomach for half an hour or an hour. Heat is a natural stimulant, and there are no possible ill effects from its use in this way.

It is a very easy and quite common practice to correct the acidity by neutralizing it with an alkali—a little soda, for example; but the object is to cure the patient, and the patient is the stomach in this case. Sweet things are particularly likely to produce a sour stomach, while acid things, with the exception of pickles, have a tendency to sweeten it, popular belief to the contrary. Some will say that they are obliged to eat a great deal of sugar with acid fruits, in order to keep the stomach from souring; but the addition of sugar does not neutralize the acid. Chemists prove that from a chemical standpoint, sugar is as much an acid as is fruit. An acid is any substance which will combine with an alkali. Sugar will combine with lime, and make

saccharate of lime. In making biscuit, the house-wife does not combine acid sour milk with vinegar, but uses soda. Sugar added to acid fruit disguises the acid from the palate, but not from the stomach. No food hard to digest should be eaten by one troubled with acid dyspepsia. If so, it remains in the stomach a long time, until that organ is worn out, and gastric juice being deficient, the microbes which are present go actively to work, and set up a ferment. Too much of even the best food should be avoided. The stomach may make gastric juice enough for a moderate quantity, but not for a large quantity.

Ulcerated Stomach.—In ulceration of the stomach, there is usually great pain felt when pressing over some particular part of the region of the stomach, an occasional vomiting of blood, pain on swallowing hot or cold, sweet or acid foods and liquids. These are some of the most characteristic symptoms. The food for such a person should be plain. Animal foods, fats, sweets, and all coarse foods should be avoided. The diet should consist of milk, gruels, and similar foods. In some cases, it is necessary that the patient should abstain altogether from eating, for a few days or even two or three weeks, the system being nourished in the meantime by injection into the bowels of digested foods.

Catarrh of the Stomach.—The symptoms of catarrh of the stomach are the presence of mucus, a heaviness or a feeling as if there was a load on the stomach. The stomach is often much distended, and is found on examination to occupy a much larger area than is natural. Sometimes the disease has so progressed that the stomach is little more than a loose pouch, and food is acted upon in it about as much as it would be were it put in the patient's pocket. In this disease a small quantity of food produces a large quantity of gas, and thus stretches and stretches the stomach. We may consider the stomach in very much the same condition as is the nose in a bad case of nasal catarrh. The introduction of food into the stomach is like taking a fresh cold in the nose, and the only thing to do is to stop eating and give the stomach a rest. Sometimes it is necessary to wash the stomach out by means of tubes of soft rubber, which are made to act as siphons—with a fountain higher than the mouth; and after rinsing it thoroughly with water, use a disinfectant solution just as in nasal catarrh. There are some cases in which the stomach has become so enormously large that a perfect recovery cannot be made. The best mode of treatment is to fast for a few days, and then begin on one meal a day, so as to give the stomach a long time to recover from the ill effects which follow eating.

The linings of the stomach are covered with a tough, tenacious slime, and so digestion is largely prevented. Nutritive enemata are valuable, and it is a good plan to wash out the stomach with hot water. Milk and farinaceous foods are the best, though many are unable to take fluids on account of slow absorption. For such, dry food is better.

Canker.—The small white ulcers which sometimes occur in the mouths of both children and adults are commonly known by this name, which really belongs to a much more serious affection. They indicate derangement of the stomach. The proper remedies are improvement of the digestion, washing the mouth frequently with cold water, and touching the cankers with nitric acid, lunar caustic, or some other caustic application. Various astringent washes are used with some benefit.

Rules for Dyspeptics.—A few years ago we formulated a few rules for dyspeptics, which we give below, publishing the same in our little work, "Digestion and Dyspepsia." Subsequently we printed the same in our journal, *Good Health*. A short time after they came back to us as an editorial in a popular magazine, published in London, and edited by an eminent physician, a member of the Royal Society. We feel highly complimented that our English friend is willing to give so hearty an indorsement of our views

on this subject as to be willing to have them appear as his own. The following are the rules :—

1. Eat slowly, masticating the food very thoroughly, even more so, if possible, than is required in health. The more time the food spends in the mouth, the less it will spend in the stomach.

2. Avoid drinking at meals ; at most, take a few sips of warm drink at the close of the meal, if the food is very dry in character.

3. In general, dyspeptic stomachs manage dry food better than that containing much fluid.

4. Eat neither very hot nor very cold food. The best temperature is about that of the body. Avoid exposure to cold after eating.

5. Be careful to avoid excess in eating. Eat no more than the wants of the system require. Sometimes less than is really needed must be taken when the digestion is very weak. Strength depends not on what is eaten, but on what is digested.

6. Never take violent exercise of any sort, either mental or physical, just before or just after a meal. It is not good to sleep immediately after eating, nor within four hours of a meal.

7. Never eat more than three times a day ; and make the last meal very light. For many dyspeptics, two meals are better than more.

8. Never eat a morsel of any sort between meals.

9. Never eat when very tired, whether exhausted from mental or physical labor.

10. Never eat when the mind is worried or the temper ruffled, if possible to avoid doing so.

11. Eat only food that is easy of digestion, avoiding complicated and indigestible dishes, and taking but from one to three kinds at a meal.

12. Most persons will be benefited by the use of oatmeal, wheat meal, or graham flour, cracked wheat, and other whole-grain preparations, though many will find it necessary to avoid vegetables, especially when fruits are taken.

Diet in Painful Dyspepsia.—Respecting the diet of persons suffering from painful dyspepsia, in which there is usually an excess of acidity in the gastric juice, the prescription must be very minute. The patient will avoid tea, coffee, and alcohol; also all meats and all substances which excite the gastric juice, as condiments, game, etc. Vegetables rich in cellulose are harmful, because they are badly digested in the stomach, which contains an excess of acids. They accumulate and dilate it. On this account, dilatation of the stomach is very frequent in persons suffering from an excess of acidity in the gastric juice. Lyon recognized that fat substances and fresh bread are badly digested, and such a patient should be per-

mitted to eat only well-toasted bread, in which the starch is in part transformed to dextrin. In all cases, it is necessary to avoid table drinks, which contribute to dilatation of the stomach. A milk regimen is indicated in the treatment of this malady when there is much pain or symptoms of ulceration. It is not necessary, however, to continue a milk diet exclusively during a long time. A glass of milk taken during a crisis of pain occurring in the night, often produces good results. The food should be finely divided and thoroughly masticated. Eggs may be freely used. A patient suffering from this disease should eat but twice a day, and eight hours should intervene between the hours of eating.

Constipation.—Torpidity of the large intestine is a condition very common among sedentary people, especially women. It is the result, in part, of eating fine-flour bread and irritating condiments. One of the greatest causes—the chief, perhaps—is neglect to attend promptly to the calls of nature. When the feces are retained in the rectum, they become hard and dry through the absorption of their fluid portion. Thus a considerable part of this foul matter is taken into the system, permeating every fluid and tainting every tissue. The dry, hard residue becomes packed in the intestine, and makes defecation difficult, and is productive of several

serious diseases of the bowels and other abdominal organs.

Nothing could be more injurious than the use of purgatives as remedies of this difficulty. No matter under what form or name they are taken, they always aggravate the disease in the end, though they seem to give temporary relief. Besides, these "aperients," "laxatives," "purgative pellets," and "cathartics" are the most potent causes of dyspepsia. To cure the difficulty, do this:—

1. Exercise plentifully and regularly in the open air.

2. Eat no bolted flour. Instead, eat wheat meal or graham flour, oatmeal, rye, barley, crushed wheat, etc. Eat plenty of fruit, sparingly of milk, sugar, and condiments. Discard hot drinks at meals. Knead and percuss the abdomen gently for half an hour each day, or five minutes at a time, and several times a day. By regularity in habits, accustom the bowels to move at a certain hour each day. Secure an action of the bowels at least once each day, if possible, but do not resort to the continued use of the enema to effect it. Drink a glass of cold water half an hour before breakfast, if it does not disagree with the stomach.

Bleeding Piles.—Piles, or hemorrhoids, is a disease in which the veins of the rectum, through obstruction of the portal circulation, have be-

come varicose. The tumors, or hard bunches, which protrude from the rectum are dilated veins, the distended walls of which frequently became so thin as to rupture, thus causing hemorrhage. This may vary in degree from a small streak of blood upon the passage to so great a quantity as to endanger the patient's life. A cure consists in removing the cause, which may be a congested liver or habitual constipation of the bowels; and in most cases, removal of the hemorrhoidal tumors by some one of the various approved methods is necessary. Sufferers from this disease will find great mitigation from their inconveniences by the adoption of a few simple measures of treatment which, though not curative, sometimes afford so great a measure of relief as to render the patient unwilling to submit to any severer methods for the purpose of effecting a radical cure. When the movement of the bowels is accompanied by very great pain, the patient should sit over a vessel filled with very hot water. When there is much bleeding, the use of a decoction of hamamelis, or witch-hazel, made by adding one ounce of the fluid extract to a pint of water, is beneficial.

Indigestion.—Proper food, eaten in proper quantity and at the proper time, ought to be properly digested. In rare cases only, it may not be. When it is discovered that an article of food is really injurious to digestion, discard

it at once. Eat few kinds at a meal. Avoid eating fruits and vegetables together. Do not drink at meals. Eat slowly. Eat mostly dry food. Do not sleep soon after eating. If the stomach is slow in its action, hot fomentations and gentle kneading soon after eating will promote digestion. Salt and other condiments are often the cause of indigestion.

Sometimes oatmeal gruel, eaten with dry crackers, will be retained and digested when nothing else will be. Other cases will not tolerate any kind of farinaceous food.

A young infant which is for any reason deprived of its natural food, and rejects everything else, will thrive upon a mixture of raw white of egg in water—the white of one egg to a half pint of tepid water. The water should not be hot enough to coagulate the egg. Thoroughly mix, and feed with a spoon.

Palpitation of the Heart.—This now common affection is in most cases due to indigestion, but not infrequently results from some disease of the heart or of the nerve-centers controlling it. When it results from indigestion, relief will be found by removal of the offending matters from the stomach. This may be best accomplished by copious draughts of hot water, the effects of which will be to either cause the stomach to contract, forcing its contents into the lesser portion of the alimentary canal, or to cause vomiting.

In cases of palpitation in which the difficulty is not dependent upon disordered digestion, and even in many cases of the latter class, the irregular action of the heart may be readily corrected by the application of cold over that region of the trunk. The application may be made in a variety of ways. A sponge dipped in cold water and applied to the chest is a very convenient means, but for continuous application a rubber bag filled with ice is more serviceable. It is important that the application should be made at the right point. To locate the heart, find the apex beat, which can usually be felt about two inches to the left of the sternum, just below the fifth rib. The application should not be made at this point, but from this point upward, covering a space about as large as the hand.

If the patient has had rheumatism, he should have his heart examined by a physician. A sudden attack of palpitation may often be relieved by warming the feet and limbs, and applying hot fomentations over the stomach and bowels.

Heart-Burn.—This unpleasant affection has nothing to do with the heart. It is the result of fermentation of the food, which produces irritating acids. These are thrown up into the mouth, producing a burning sensation. A few sips of hot or cold water will commonly give relief.

Sometimes a warm-water emetic is required. Soda and magnesia, which are so often used, are

productive of a vast amount of mischief. They never cure, but increase the real disease, and sometimes cause fatal injury to the stomach and intestines. A teaspoonful of wheat charcoal, taken immediately after a meal, is an excellent non-medicinal remedy for this uncomfortable derangement of digestion.

Headache may be caused either by an excess or a deficiency of blood in the brain. It is quite probable that headache is as frequently the result of a diminished blood supply as of an excess of blood. Headache due to excess of blood is usually accompanied by throbbing of the temples, flushed face, exhilarated pulse, and other indications of vascular excitement. Headache resulting from deficiency of blood is indicated by pallor, uneven pulse, and general symptoms of anæmia.

For relief of headache due to excess of blood in the brain, cold applications may be made to the head by means of ice bags, cloths wet with cold water, or the simple application of cold water to the head by means of a sponge or the hand. The hair should be well moistened, so that the cold water will come in contact with the scalp. The applications must be made continuously, otherwise the effect of the cold will be to increase rather than diminish the amount of blood in the brain. Derivative applications may be made to other parts of the body, especially if

the circulation is defective in these parts, such as warm sitz baths or leg baths, massage to the legs and abdomen, or the application of the flesh-brush to the whole surface of the body.

For enæmic headaches, warm applications should be made to the head, and the patient should swallow a quantity of hot water. Water may also be taken to advantage by enema. The water should be introduced into the bowels slowly, so that it can be retained. By the absorption of the water taken through the mouth or by enema, the amount of blood is so increased that the blood pressure in the brain is also augmented. The simple act of sitting in warm water seems to increase the blood flow to the brain, and often gives relief from a very distressing headache.

Sick and Nervous Headaches.— Very few people care to admit that they have sick headaches, so they call everything of the sort “nervous headaches.” Sick headaches have come to be significant of big dinners and gormandizing. There is this difference between the two: a nervous headache is always a one-sided headache; at any rate it usually begins in one side, in the eye or forehead, but very frequently extends to the other side. It is usually caused by weak digestion and a bad stomach. In sick headache there is a mass of food in the stomach which has set up decay and fermenta-

tion, and has thus caused acute catarrh of the stomach. In both cases, prevention is better than cure. For sick headache, stop overloading the stomach and eating improper food. For nervous headache, begin treatment as soon as you feel it coming on. Go to bed ; shut yourself up in a dark room ; drink plenty of hot water ; keep yourself perfectly quiet and calm, letting nothing come near to disturb you. In a little while the impending attack will pass away.

Another Remedy for Headache.—It is something very curious that heat and cold may be used interchangeably with like effects. Extreme heat will destroy the skin ; so will extreme cold. Hot applications are stimulating to the circulation, and for some kinds of headache will give immediate relief. If cold applications are more agreeable, then these are probably what are needed. In general, a throbbing headache, with tenderness and soreness of the scalp, can best be relieved by hot applications. Where one is suffering with a bursting pain in the head, as if the brain had not room enough, it is best relieved by cold applications to the head, with heat to the spine and shoulders.

Bad Breath.—The chief causes are catarrh, decayed teeth, foul teeth, disordered stomach, and constipation. The remedy is to remove the cause. If there are foul and decaying accumulations in the nose, remove them by syringing

the nose with a weak solution of permanganate of potash, common salt, or tepid water. Simply snuffing the fluid gently into the nose is quite effective. The fluid should not be thrown violently into the nose, as injury may result therefrom.

Decayed teeth should be either filled or drawn. Their presence in the mouth is not only a cause of offense, but is productive of disease of the stomach, besides being a source of impurities which find their way into the blood through the lungs. Uncleanly teeth are quite certain to decay sooner than those which are kept free from impurities. If the food which adheres to the teeth and lodges between them is allowed to remain, it speedily undergoes putrefaction and becomes very offensive. The teeth should be cleansed with a brush and pure water after each meal, and soon after rising in the morning. Once a day, at least, they should be thoroughly brushed with fine soap and pulverized chalk. Artificial teeth need special attention. They should be daily washed with fine soap and a solution of carbonic acid and water, in the proportion of a teaspoonful of the acid to a pint of soft water. Shake well before using. Do not wear artificial teeth during the night. A substitute for obnoxious acids which can be prepared at any drugstore is a weak rose water solution.

cleansing the mouth and the teeth. It should be used freely.

When disorder of the stomach causes bad breath, it must be cured before the evil can be remedied. If the contents of the bowels are retained instead of being promptly voided, their fluid portion will be absorbed into the blood with all their noxious and disgusting properties. The characteristic odor can be easily detected in the breath of persons whose bowels are constipated or irregular. Few things are more offensive than the breath of a costive child.

The proper remedies for foul breath from this cause are pointed out under the head, "Constipation." No amount of good looks can atone for a foul breath. Cleanliness and wholesome diet are all that are necessary to remove it. It is a very disgusting thought that the breath may contain what ought to have been voided from the bowels some time before.

Vomiting.—If the patient evidently has something in his stomach which ought not to be there, as indigested food, or something obnoxious which has been swallowed, administer a warm-water emetic to assist in the removal of the cause of the difficulty. If there is no evidence of anything in the stomach which needs expulsion, apply either very cold or very hot cloths over the stomach, place the feet in hot

water, and give sips of either hot or cold water, or little bits of ice to swallow. The attempt should not be made to check the vomiting unless it is clear that the stomach has been freed from its irritating contents.

How to Relieve Nausea.—In many cases of nausea, all efforts to relieve these symptoms by the introduction of remedies into the stomach are unavailing, but prompt relief may often be obtained by the employment of simple external measures, such as the application of heat or cold to the stomach and the spine, ice to the back of the head or to the throat, mustard plasters applied over the stomach, or a similar application to the spine.

Baldness.—Dyspepsia is one of the most common causes of baldness. Nature is a great economizer, and when the nutrient elements furnished by the blood are insufficient to properly support the whole body, she cuts off the supply to parts the least vital, like the hair and nails, that the heart, lungs, and other vital organs may be the better nourished. In cases of severe fevers, this economy is particularly noticeable. A single hair is a sort of history of the physical condition of an individual during the time it has been growing, if one could read closely enough. Take a hair from the beard or from the head and scrutinize it, and you will see that it shows some attenuated places, indicating that at some

period of its growth, the blood-supply was deficient from over-work, anxiety, or under-feeding. The hair falls out when the strength of its roots is insufficient to sustain its weight any longer, and a new hair will take its place, unless the root is diseased. For this reason, each person has a certain definite length of hair. When the hair begins to split or fall out, massage to the scalp is excellent. Place the tip of the fingers firmly upon the scalp, and then vibrate or move the scalp while holding the pressure steadily. This will stimulate the blood-vessels underneath, and bring about better nourishment of the hair. A brush of unevenly tufted bristles is also excellent to use upon the scalp, not the hair. Another remedy is to cut the hair short, and bathe the head twice a day in cool water, adding considerable friction with a brush of medium stiffness. Keep the feet warm, and maintain good digestion. If the hair follicles are not destroyed, the hair will grow again; otherwise it will not. The various lotions sold for this purpose are poisonous, and produce diseases which are sometimes fatal.

Dandruff. — This is a condition in which branny scales are shed from the scalp in great abundance. It may be due to eczema or pityriasis, or may result from a disorder of the sebaceous glands, and from acne. The latter is the most common cause of the disease. In

this form of affection, the abnormal secretion of the fat glands appears upon the scalp as yellowish scales. This condition is sometimes present upon the nose and cheeks as well as the scalp. It is often a very annoying complaint. When affecting the scalp, it sooner or later results in loss of the hair. This is not because the dandruff destroys the hair, but because the same disease which causes the dandruff, interferes with the nutrition of the hair, thus occasioning its loss. On account of its tendency to produce baldness, the disease should never be neglected. Dandruff is generally occasioned by disorder of the digestion, or some other debilitating disease.

Restore the general health by proper attention to the digestion and general hygiene. The scalp should be treated by gentle shampooing with ordinary washing soap, once or twice a week. A very soft brush should be used. Neither a stiff brush nor a fine comb should ever be used for removing dandruff. After shampooing, a liniment composed of equal parts of castor-oil and alcohol may be rubbed on. Or obtain at the drug store a drachm of hydrate of chloral. Dissolve in twelve ounces of water. Moisten the scalp with this solution every day. The scalp will be cleared of dandruff, and the hair prevented from falling out.

Sore Eyes.—Ordinary inflammation of the

eyes is greatly relieved by laying upon them one or two thicknesses of linen cloth wet in tepid water. Smarting of the eyes when reading will usually be relieved by moistening them often with water. Never use eye-water or caustic unless under the advice of a skillful oculist.

Nearsightedness.—If the eyes are nearsighted, they should be at once provided with suitable glasses, or they will suffer injury. The glasses should be adapted to the eye by an experienced oculist.

Farsightedness.—Like the preceding, this disease needs immediate attention, although less injury will result from some neglect in this case.

Styes.—This annoying affection of the lids is the usual result of some defect in the eye which may be remedied by glasses. This fact is not generally known, but ought to be. Instead of pulling out all the wickers, and existing a constant sufferer of these annoying blemishes, consult a good oculist, and have the defective eye corrected. The following is recommended as an excellent remedy for styes: Dissolve one part of boracic acid in thirty parts of distilled water. Wet pieces of wadding in the solution, and place upon the eye several times a day. This is said not only to cure, but to prevent a return of the trouble.

Granulated Eyelids.—We have found the hot spray applied to the eye, one of the most

useful of all means of treating this disease. If a spray apparatus is not at hand, simply laving the eye with water as hot as can be borne without inconvenience, may be employed. The application should be made daily for several months, as this disease is one which requires months, and in some cases, years, for its successful treatment.

Spectacles.—There are various forms of troubles with the eyes which require the use of spectacles; for instance, myopia, hypermetropia, and presbyopia. In myopia, or short-sightedness, the eyeball is too long. It is almost always congenital—a defect which has existed from birth. The appearance of the eye usually denotes this defect, if it is serious. In hypermetropia the eyeball is too short, and the vision becomes indistinct or blurred. Continued use of the eyes in this condition causes pain and fatigue. The focus of the eye constantly changes with the distance of the object toward which it is directed. In presbyopia, or old-sightedness, a person has lost the ability to regulate the eye to variations in distance. A change occurs in the eye when it is directed from an object near at hand to one that is distant, and *vice versa*. In strong, young eyes, these changes are made instantly, and with no difficulty; but in old age the ability for adjustment is diminished. These difficulties of the

eye are apt to get worse, unless they receive proper attention. When the eyeball is too short, as in hypermetropia, in the effort to see clearly the muscles are worked very hard, and they become weak and worn out, and all the muscular arrangement of the eye becomes disturbed. Especially is this the case in long-continued efforts at reading and studying. If you see a child flat in the forehead, and short in the antero-posterior diameter, you may be pretty sure that he has hypermetropia. It may not be known that there is anything the matter with his eyes, until he begins to go to school; then he will complain of pain in the eyeballs, and headache, and there will be redness of the eyes, and perhaps styies will form. In cases of myopia in children, they see objects near at hand, so that they do not realize that there is anything the matter.

Hypermetropia can be overcome by adjusting glasses so as to make the lens of the eye perfect, and this is much better than impairing the eyesight by continual strain. Glasses will put the overworked muscles entirely at rest. At first the eyes will fail to recognize such aid, and the person may complain of giddiness, and other difficulties of the kind, and think he cannot wear the glasses. The eyes are simply trying from habit to do the work which is now rendered unnecessary. By and by the eye will dis-

cover this, and settle down and be at rest. If such cases are taken in time, the eyes may be able to recover their normal conditions, and after awhile one will be able to dispense with glasses altogether. If not, glasses will be permanently necessary. This condition of hypermetropia is one that is universal in lower animals, such as cats, dogs, owls, etc.

In cases of myopia, glasses will always have to be worn; that trouble can never be outgrown. There are cases where the muscles become so weak that one cannot look at a near object. This is brought on by constantly taxing the eyes to look closely at a near object, as in using the microscope, or in crocheting and embroidering. Children in school get in the habit of focusing too strongly; the muscles become weak, and perhaps they will see double—not two entire objects, but two overlapping each other, or with blurred outlines. In normal sight, a distinct image of every object is formed in each eye, and by delicate adjustment, these are exactly superimposed upon each other, so that but one image is presented to the mind; but if the focusing muscles of the eye become weak, they fail to perform their work perfectly. A person may bring on this muscular weakness by reading when lying down, or by abuse of the eyes in various ways. He will then have to wear glasses that will assist his eyes to properly adjust the

images formed upon the retina. It is not true that because a person puts on glasses he must necessarily wear them always. The difficulty may be of such a nature as to be wholly cured by the use of glasses for a few weeks or months.

Earache.—Hot applications, or the prolonged hot douche, applied with the fountain syringe, will often give relief. A hot poultice, continuously applied, and frequently changed, is a good remedy. Half a boiled or roasted onion, bound upon the ear, will sometimes give relief. No remedy is infallible. The hot foot-bath and sitz-bath are excellent remedies. If an abscess is forming in the outer ear, the pain will continue until it opens, or is lanced. A few drops of laudanum placed in the ear gives relief in some cases, and can do no harm. A still better application is obtained by evaporating the alcohol from a teaspoonful of laudanum, and mixing the residue with half a teaspoonful of sweet oil or glycerine. Incline the head, and pour a few drops of this into the ear. Such applications give relief only by deadening the sensibility of the nerves, and not by removing the cause of the difficulty. Hence they should be employed, if at all, only in connection with other remedies.

For Nose Bleeding.—A slight bleeding from the nose may almost invariably be checked by holding the hand of the affected side above the head. If both hands are held above the head,

a greater effect may be obtained. Placing the hands and feet in hot water is another way of checking nosebleed. The most violent attack may be controlled by plugging the nostrils before and behind. Plugging the nostrils is not so difficult an operation as might be imagined. It is only necessary to pass through the nose a stiff, waxed thread, or a piece of shoemaker's "waxed end," catch the end in the throat, draw it out through the mouth, attach a piece of cotton rolled firmly, about the size of a walnut, and draw it tightly into position. Sometimes both sides must be plugged. It is important to leave an end hanging down from the mass of cotton in the throat, which may be seized by a pair of forceps, and used to withdraw the cotton after the bleeding is stopped. The cotton should be left in place for twenty-four hours.

A correspondent of the *Scientific American* says: "The best remedy for simple bleeding at the nose, as given by Gleason in one of his lectures, is a vigorous motion of the jaws, as if in the act of mastication. In the case of a child, a wad of paper should be placed in its mouth, and the child instructed to chew it hard. It is the motion of the jaws that stops the flow of blood. This remedy is so very simple that many will feel inclined to laugh at it; but it has never been known to fail, even in very severe cases."

Red Nose.—In many cases, redness of the

nose is caused by chronic indigestion. It may also be the result of chronic nasal catarrh. It results most frequently, perhaps, from a disease of the skin. Bathing the nose with hot water for ten minutes two or three times a day, in cases where the redness is not accompanied by irritation, is a good remedy; or the application of zinc ointment is beneficial when the redness is accompanied by an irritation of the skin. When the redness is due to dilated blood-vessels, and is unaccompanied by irritation, we have found benefit by the use of collodion, which is simply painted over the affected part. It adheres and contracts by depression of the blood-vessels, and decreases their caliber.

Acne.—This disease is often a source of great affliction, especially when it affects the face. It appears chiefly in two forms, the irritable and the indolent. In irritable acne, there is redness and great irritability of the skin. In the indolent form, the skin is coarse, presenting black-heads, often greasy, and here and there are nodules formed by accumulation of secretions in obstructed glands. The two forms require different treatment. In the treatment of acne, the most important means is diet. The patient should avoid all stimulating diet, and the food should be such as will agree with the stomach. Great care should be taken to keep the digestive organs in good order. It is of special impor-

tance that the bowels should be evacuated daily. If they are not fully emptied otherwise, it should be done by enema. The employment of the form of enema called "flushing of the bowels," is of great value in cases where the bowels are sluggish, with a tendency to the accumulation of fecal matters in the colon. This treatment consists of taking an enema in the knee-chest position. The amount of water should be about three quarts. By this means the entire colon may be thoroughly evacuated. There are other measures of treatment, consisting in the application of lotions. A lotion composed of one part carbonate of bismuth, one part oxide of zinc, and eight or ten of water, is an excellent one. But, really, lotions accomplish but little in cases of this sort. In the ordinary forms of this disease, lotions are not needed. The skin of the affected part should be carefully rubbed, and the accumulations in the glands extracted by a gentle pressure between the fingers, or by an instrument for the purpose. A sponge does very well. The skin should be kept clean, by shampooing it with fine soap. These measures will be found very effective.

Remedies for Erysipelas.—Erysipelas is now so well recognized as a germ disease that the remedies recommended for its treatment are naturally those which include some form of germicide. The following methods are respectively

recommended by physicians of high authority and large experience:—

1. Wash the affected parts and the surrounding skin with soap, and then apply a solution consisting of one part carbolic acid to twenty parts of alcohol.

2. Apply ordinary mucilage containing one part of carbolic acid to twenty-five parts of mucilage.

3. Apply an ointment consisting of one part carbolic acid to twenty parts vaseline.

4. Paint the affected parts with an ointment consisting of creoline, one part, iodoform, four parts, lanolin, ten parts. Cover with rubber gutta-percha tissue.

5. Apply compresses wet with a solution of salicylate of soda, one part to twenty of water, covering the compresses with rubber gutta-percha tissue.

Eczema.—Eczema is catarrh of the skin very similar to catarrh of the nose. The secretion dries up, and is left in little scales upon the surface. It needs astringent treatment. In cases of chronic eczema, where there is cracking of the skin, and where the secretion dries down in little blisters so that there is a thickening of the skin, treatment with hot water, just as hot as can be borne, from three to five times a day, is the best thing. A hot spray is better than soaking the part in hot water. The effect

is to stimulate the blood-vessels so that they will contract. An ointment of equal parts of zinc and tar is good. A solution of two teaspoonfuls of soda to a pint of water is another good application. When there is considerable irritation, apply the zinc ointment.

A New Remedy for Shingles.—This malady, known to physicians as herpes zoster, is often very unyielding to ordinary measures of treatment, lasting sometimes several weeks, and accompanied by most excruciating neuralgic pains. A French physician has recently called attention to the fact that the irritation and pain may be greatly relieved by an application of an alcoholic solution of resorcin, thymol, menthol, or tannin; two parts of resorcin, two of tannin, and three of menthol or one of thymol, should be employed to one hundred parts of alcohol. Cloths, wet in either one of the solutions named, and applied over the seat of the disease, being covered with oiled silk, muslin, or rubber cloth, it is said, give very prompt relief, which becomes permanent if the applications are renewed every few hours.

Liver Spots.—The liver is rarely responsible for the dark stains appearing on the face and the body, and which are generally attributed to it. The proper name for these is chloasma. They are due to a large amount of pigment. If the dye extends clear through the skin, there is

no getting rid of the spots short of a surgical operation.

Freckles produced by exposure to sun and wind may be easily removed by the application of such remedies as grated horse-radish, lemon-juice and borax, — one dram borax to one ounce lemon-juice,—or lemon-juice alone. Freckles which are present at all times, whether there has been exposure or not, cannot be removed by this means, or by any other with which we are acquainted. They are a part of the skin, and are so deep that lotions applied to the surface will not affect them.

Wrinkles.—The inquiry, “How can wrinkles be removed?” is often made of physicians. A recently discovered and excellent remedy is massage, applied in connection with some unguent, as the finest vaseline or lanolin. By the daily employment of this simple means in the hands of a skillful manipulator, wrinkles can often be almost entirely removed.

Itching without Eruption.—One of the most obstinate forms of pruritis is that which is not accompanied by eruption of any sort. Elderly people are particularly subject to this form of the disease. The following remedies are recommended by an eminent French professor, as being very valuable in such cases: After washing the body, at night, just before retiring, with a quart of warm water con-

taining two drams of a solution of carbolic acid and half a pint of vinegar, dust over the entire body with a powder consisting of five drams of salicylite of bismuth and three ounces of starch, or three drams of salicylic acid and three ounces of starch.

Itch.—This disease is caused by a parasite which burrows under the skin. The object of treatment is to kill the insect. It is perhaps possible to do this by means of water alone ; but as the only applications necessary are made to the skin only, no harm can result from the careful use of more speedy and effective remedies. Sulphur is the most reliable remedy. Take two ounces of lard, one ounce of sulphur, and one eighth ounce of powdered sal-ammoniac. Mix well, and apply at night after thoroughly washing the affected parts in strong soap-suds. Allow the ointment to remain on over night. Wash it off thoroughly in the morning, and put on clean clothes. Repeat the same treatment three or four times in succession. An ointment of storax and lard, one part of the former to four of the latter, is quite efficient. Perfect cleanliness is essential to successful treatment. Oil and lard alone, it is said, will cure by half a dozen applications. Mercurial preparations should be avoided, as they sometimes poison the system.

Chafing.—Fleshy persons and children are

often seriously troubled by chafing, in hot weather. Daily cleansing of the affected parts with cool water and fine soap, and local tepid bathing, repeated several times a day, will prove the most efficient remedies. Anointing the parts with sweet cream or a little unsalted butter, and applying dry, powdered starch, are useful measures. Cleanliness is the most important remedy.

For Chafing Shoes.—An excellent remedy for shoes that chafe the feet, will be found in a mixture consisting of eighty-five parts pulverized soapstone, starch fifteen, and salicylic acid four. Put a little of the powder in the shoes.

Chapped Hands, Feet, and Lips.—Wet, cold, and dirt are the chief causes. The use of poor soap, and imperfectly drying the hands before exposure to cold, are the exciting causes of chapped hands, in most cases. To cure, keep them scrupulously clean. Wash them with castile soap and soft water. After wiping them nearly dry, rub them with finely powdered starch.

Washing the hands with water to which a handful of bran or cornmeal has been added is a good remedy. Another remedy : After thorough washing and drying at night, apply glycerine, adding a few drops of soft water, and rubbing in well. Wear gloves during the night. Sweet cream is another common remedy. Honey is warmly recommended by some. The wet bandage is one of the best remedies.

The same remedies are to be used for the lips and feet as for the hands. When fissures, or cracks, occur, keep the edges together by means of adhesive plaster.

Warts.—If the wart is small, it may be cured by touching it with the end of a stick which has been dipped in strong acetic acid. The application should be made several times a day until it is destroyed. If large and old, apply nitric acid in the same way. Lunar caustic and caustic potash may also be used.

Felon.—The real disease is an abscess formed beneath the periosteum, or skin of the bone. It may sometimes be dispersed by the application of turpentine or other strong irritants, or by holding the finger in strong lye as hot as can be borne for half an hour, several times a day. Keeping the hand constantly in ice-cold water gives great relief, and sometimes prevents the further progress of the disease, if employed in time. Relief is also afforded by the cold douche, arm-bath, and wearing the cold compress upon the arm and hand. When the disease is manifestly settled, the quickest remedy is found in lancing the finger to the bone. Warm fomentations and poultices may afterward be applied, to encourage the discharge.

Ingrowing Nail.—If the toe is greatly inflamed, place it in a warm foot-bath, an hour at a time, three times a day. During the in-

tervals, it should be covered with a poultice made of bread and milk, linseed, or slippery elm. By this means, the inflammation and tenderness will be greatly reduced. The next step in treatment should be to scrape the center of the nail with a sharp knife until it becomes as thin as possible without exposing the flesh. Then slightly elevate the outer edge of the nail for the purpose, and place underneath it delicate pledgets of cotton. If the nail penetrates the flesh so deeply as to make this impossible, it may be necessary to remove a very small portion by splitting it off with a sharp knife. A still better way is to crowd underneath the diseased portion of the nail delicate filaments of floss-silk, drawing in one portion after another until the nail is elevated out of the tender flesh. The nail may be still further elevated by the employment of the same means, while the poultices are continued, till a complete and permanent cure is effected.

Stone-Bruise.—This disease, usually the result of accident, is of a nature similar to felon. The intense pain often present is relieved by placing the part in very cold water. It may be treated nearly like a felon.

Corns.—These are excrescences produced by a morbid growth of the skin. They are caused either by friction or by pressure, and are usually the result of wearing a tight and otherwise ill-

fitting boot or shoe. Corns are not always produced by tight shoes or boots, being often occasioned by the friction of loosely fitted foot-gear. There are two varieties of corns, hard and soft. Hard corns are formed upon the outside of the toe ; soft corns are produced between the toes.

To cure a corn, the first thing to be done is to soften it. To accomplish this, soak the foot in hot water for one hour every night, and then apply a cloth saturated with a strong solution of saleratus. Continue this treatment for three or four days ; then remove the corn with a thin, sharp-bladed knife, carefully working the instrument between the corn and the healthy skin beneath. If the whole corn has been removed, all that now remains to be done is to protect the part from pressure. This may be very easily accomplished by placing over it a piece of soft buckskin, in which an opening has been made of the exact size of the corn, which should be placed exactly over the seat of the disease. By this simple means, the diseased surface will be wholly protected from pressure. Any tendency to harden may be prevented by keeping the buckskin saturated with sweet oil. This simple treatment, if thoroughly applied, will rarely fail to cure any corn.

Here is the latest suggestion : Soak a piece of bread in strong vinegar ; apply to the corn as

a poultice. The effect is, the corn is so softened that it can be easily removed.

Bunions.—These originate in the same way as corns, and require somewhat similar treatment. Soaking the feet in hot water when they are inflamed, and bathing with cool water at other times, gives great relief. If there is much thickening of the skin, apply a caustic, as nitrate of silver, or lunar caustic. When the black surface comes off, apply the caustic again. Wearing a piece of soft buckskin, as directed for corns, to prevent pressure, is a useful remedy.

Chilblains.—This annoying affection, though seemingly insignificant, often makes existence almost a burden by its constant irritation. It is easily cured, but not by the application of any sort of salve, ointment, liniment, or quack nostrum, no matter how highly recommended.

Just before retiring, prepare two vessels for a foot-bath. Place in one water as hot as can be borne, and in the other very cold water. Place the feet first in the hot water for two minutes, then in the cold water for the same time. Alternate thus four or five times, merely dipping the feet in the cold water the last time, and then wiping them dry. Repeat this treatment every night until the cure is effected. Improvement will usually begin at once.

Wear thin cotton stockings inside the woollen ones, and avoid exposing the feet to severe cold until they are well. A general bath twice a week is necessary.

A gentleman called at our office the other day, suffering with what his physicians had termed eczema of the feet. The heels and sides of the feet were red and slightly swollen, and exceedingly painful. The trouble began with freezing the feet several years ago, as we found by inquiry. The case was evidently one of chronic erythema, an inflammation or congestion of the skin, or what might not improperly be termed, chronic chilblains. The following treatment cured him: 1. Bathe the feet with very hot water for fifteen or twenty minutes every night. 2. After bathing the feet with hot water, rub them well with benzoated zinc ointment.

Tender Feet.—When feet are tender and painful after long walking or standing, great relief can be had by bathing them in salt and water, a handful of salt to a gallon of water. Have the water as hot as can be comfortably borne; immerse the feet, and throw water up over the knees with the hands. When the water grows cool, rub feet and limbs briskly with a dry towel.

Foul and Profuse Perspiration.—Just before retiring at night, take a hot and cold foot-bath, dipping the feet first in cold water then in

hot, allowing them to remain in each for about one half minute, and repeating the operation fifteen or twenty times. Then wipe with a soft towel, and when nearly dry, rub with subnitrate of bismuth, using two heaping teaspoonfuls.

Burning Feet.—Bathe the feet night and morning with tepid water to which a little soap has been added. When nearly dry, dust freely over them a powder composed of one part of salicylic acid and sixteen parts of powdered alum. If the burning is especially troublesome at night, dip in hot water for fifteen minutes before applying the powder. A jug filled with cold water is a good palliative.

Cold Feet.—Cold feet are due to deficient circulation. Administer the alternate hot-and-cold foot-bath as directed for chilblains, several times a day, if possible, and at least twice a day. Wear large, thick boots or shoes, and thick woolen stockings. Keep the feet dry. Exercise. Allow no constriction about the limbs, as garters or elastics. Clothe the upper portions of the limbs warmly. Do not wear rubbers, except for a little while at a time, when necessary. Electric or galvanic soles are of no use whatever. The feet should be kept perfectly clean, and the stockings should be changed every day, being allowed to air one day, when they may be worn again. Three

changes a week are none too many for cleanliness and warmth. Cork soles are useful.

Rheumatism.—Inflammatory rheumatism requires the attendance of an experienced person. The wandering pains from which many people suffer, which are commonly called rheumatism, can be relieved by proper attention.

1. Avoid the use of irritating condiments, tea, coffee, tobacco, and alcoholic liquors, including wine, beer, etc. Avoid, also, gross food, and the use of food or drink containing saline matters. Be temperate in all things.

2. Dress warmly and uniformly. Silk or buckskin undersuits, worn next the cotton under-clothing, give great relief to many. Wear flannel the whole year.

3. Apply heat to the painful parts as in neuralgia. The hot-air and vapor baths are good. Keep the skin clean. Exercise freely.

The Apple-Cure for Gout.—Dr. John Hunter was an enthusiastic advocate of the apple-cure for gout. Instead of drinking freely of wine, and consuming quantities of rare roast beef, he enjoined upon his patients who were suffering from gout, the importance of the free use of apples in the place of wine-drinking, roast beef, mutton chop, etc.

Colic.—The usual causes are indigestion and constipation. Administer a copious enema to secure a free passage from the bowels. Apply

dry, hot cloths or hot fomentations over the abdomen. Percuss and knead the abdomen gently, to promote action of the bowels. Hot drinks do very little good, and usually as little harm. For an infant, fold a thick woollen blanket, wet one end in water as hot as can be borne, wring it so that it will not drip, and apply the wet end over the abdomen, wrapping the remainder round its body. It is often often surprising to mark the almost instantaneous relief which follows. The applications must be *hot*, not simply warm, and must be renewed every five or ten minutes, until relief is obtained. Nearly all abdominal pains may be relieved in the same way.

Convulsions.—The convulsions of children—commonly called spasms, or fits—are usually due either to worms or indigestion, unless they occur in the course of some acute disease. Place the child at once in a hot bath, disturbing it as little as possible. It will usually recover in a few minutes. When sufficiently recovered, administer an enema to free the bowels, and keep the child perfectly quiet. Some advise the cold bath, and practice it with good success. The patient should be rubbed vigorously during the cold bath.

Epileptic convulsions require more than simple domestic treatment. The most that can be done for the patient during the fit is to prevent

him from injuring himself or others. The lips and tongue are often severely bitten by the spasmodic action of the muscles of the jaws' closing the teeth together upon them. This may be prevented by placing a piece of soft wood or other material between the teeth at the beginning of the fit. As the patient usually sleeps some time after the attack, the brief interval of consciousness which immediately follows it should be occupied in getting him into a comfortable position.

Hysterics.—This peculiar disease is most common in women, though sometimes observed in men. It is a real disease, and should be treated as such. The symptoms are fully as varied as the cases. Hysterics may simulate almost any disease. Place the patient upon a sofa, beside which put a large vessel. Hold the head of the patient over the vessel, and pour cold water upon it from a pitcher held a few feet above. Apply at the same time cold to the chest and spine, and hot bricks or bottles to the feet. This treatment may be continued for an hour or two without injury, if the patient does not recover sooner. Speedy relief is usually secured. If the patient becomes quite chilly, apply warm cloths to the chest and shoulders.

Apoplexy.—If a person falls suddenly, and is found breathing hard, with a full pulse, throbbing temples, and flushed face, he has apoplexy.

Loosen every constriction about the throat at once, elevate the head, secure fresh air, bare the chest, and pour cold water upon the head. See that the extremities are warm. Call a physician as soon as possible. Do not bleed, nor give brandy, ammonia, or any other stimulant. Apoplectic convulsions are quite rare. They usually occur in sedentary people of full habit, in advanced life.

Fainting.—When a person faints, the heart nearly ceases its action, the action of the lungs is nearly or quite suspended, the face becomes pale, and partial or complete unconsciousness ensues. If the person has fallen, do not elevate the head, but be careful to keep it as low or lower than the rest of the body. If the patient is sitting in a chair, step behind him, grasp the chair at the sides, and carefully tip it back until the head touches the floor. This alone will suffice, in many cases. If the patient does not immediately revive, loosen the clothing about the neck, chest, and abdomen ; sprinkle cold water in the face ; slap the surface of the body with the hand or a slipper ; apply ammonia, camphor, or any other pungent odor to the nostrils ; secure abundant cool, fresh air, and use artificial respiration. If the patient can swallow, give very hot or very cold drinks.

A person who is subject to syncope should lie down at once when he first feels faint.

Sleeplessness.—This most annoying and exhausting symptom may be greatly relieved by attention to the following suggestions :—

1. Retire early, having taken, an hour or so previously, sufficient muscular exercise to induce slight weariness.

2. Eat nothing within four hours of bedtime. If “faint” at the stomach, drink half a glass of hot lemonade. If this does not suffice, a mellow sweet or subacid apple may be taken an hour before retiring, unless fruit occasions pain or acidity.

3. If feverish, the skin being hot and dry, upon retiring, take a light hand-bath with tepid water.

4. If troubled with cold feet and hands, employ the means suggested for the relief of coldness of feet.

5. Sleep in a cool room, but take care that the bedding is well aired and dry, and the room well ventilated.

6. When nervousness causes loss of sleep, there are various methods of inducing slumber, one of the most efficient being slow, deep, and steady breathing. By this means the lungs are filled with blood, and the brain is thus relieved of the congestion which causes wakefulness.

Ague.—Ague, or intermittent fever, is one of the most common of all diseases in malarious districts. It prevails especially in the spring

and autumn months. The exciting cause of the disease is a certain poisonous miasm which rises from low lands that are alternately flooded and dry during the warm season.

Bilious or remittent fever is produced by the same cause. These diseases are so common that we need not describe the symptoms.

Prevention. — The following suggestions respecting prevention will be found useful :—

1. Unless compelled by dire necessity to do otherwise, do not live in a malarious district ; in other words, seek a residence that is as remote as possible from localities where malaria is known to be produced.

2. If your residence is already fixed in a malarious district, employ every means possible to prevent the reception of the poison into the system, and to counteract its effects. Avoid being in the vicinity of the malarious localities during the evening and early morning, since at these times the miasm settles near the ground. Secure, if possible, a dense growth of trees between the source of malaria and the residence ; if this is impracticable, plant, every year, in the same place, a large area of sunflowers, which will serve the purpose of destroying the miasm.

3. Keep the system in as free and clear a condition as possible, by avoiding such habits and such articles of diet as will impair the integrity of the liver, skin, kidneys, lungs, and other elim-

inative organs. This will enable the system to eliminate the poison without its occasioning disease.

Treatment.—At the beginning of the disease, give the patient a vapor bath on the well day, and in case the chill occurs every other day, repeat the treatment on each well day for a week. During the chill, surround the patient with warm blankets, hot bricks, bed-warmers, a jug of hot water, or any other means of imparting artificial heat; but avoid applying water to the surface of the body, unless it be to the head. Remove all hot applications as soon as the fever begins to appear. When the fever is at its height, sponge the body with tepid water. The sponging may be repeated at intervals while the fever continues. During the sweating stage, frequently wipe the skin with a soft cloth; and when the sweating ceases, change the patient's clothing after a thorough sponging of the body. If there is a tendency to sweat at night, administer the wet rubbing-sheet at bedtime. If the vapor bath cannot be given, the wet-sheet pack is a very good substitute.

The diet should be very simple. Oatmeal or graham gruel, with ripe fruit and dry toast or graham crackers, constitute an admirable dietary for a person suffering with ague.

In case the chill occurs every day, the vapor bath or pack should be given in the afternoon,

or every other day, after the paroxysm is past. If the severity of the disease is unabated after this treatment has been thoroughly applied for a week or ten days, it would be well to resort to direct means for breaking the periodicity of the disease. A very efficient means of doing this is to get the patient into a profuse sweat by surrounding him with hot bricks, warm blankets, and other hot applications, twenty minutes before the time for the chill to begin. The patient should be kept very warm for an hour or two, or until all danger of chilling is past. Care should be exercised not to press this means to such a degree as to produce violent congestion of the head. If this plan fails after two or three thorough trials, the use of an anti-periodic medicine will break the chills, and then the patient will make a rapid recovery. Medicine properly used will do the system less harm than the prolongation of the disease ; for the popular theory that it is better to wear out the disease than to check it in any way, is a great error. In many instances, consumption, dropsy, and other grave and fatal diseases are produced by allowing ague to continue until the vital forces of the patient are exhausted.

An Austrian physician recently published an account of a new method of treating ague by rubbing the spine. He made the discovery

while he was army surgeon on duty at a distant point. The stock of quinine becoming exhausted while many soldiers were suffering from ague, he was at first at a loss to know what could be done for them. But wishing to keep them occupied with some sort of treatment, he ordered that the spine should be well rubbed twice a day, a little ointment being used simply for lubrication. He found the treatment singularly successful, and since that time has rarely failed to cure this disease, without administering medicine of any kind.

Diabetes.—When this disease occurs in fleshy persons, it is almost invariably due to errors in diet. Through the excessive use of sugar, the liver cells have undergone such changes as to render them incapable of transforming the sugar brought by the portal vein from the digestive organs, into liver starch, and again transforming it in small quantities into sugar, which the organ doles out to the body as is required by the system. In consequence of these changes, the portal blood is allowed to pass directly into the circulation, and the sugar is eliminated by the kidneys. When this disease appears in lean persons, it indicates a more serious change, and a failure on the part of all the cells in the body which are employed in the consumption of sugar, so that it is a much more

serious disease. The first form of the disease may be controlled by a regulation of the diet, carefully avoiding all sugar and starchy articles. But in the other form of the disease, diet has no influence, other than to lessen slightly the amount of sugar ; the patient's condition is commonly not very much improved. Possibly the first form of the disease is a very common one, and its cause must be well understood ; and as this disease is alone controlled by diet, and is rarely entirely cured, it is much better to prevent the disease altogether, by avoiding the excessive use of sugar and all starchy articles of food.

Incontinence of Urine in Children.—For “wetting the bed at night,” the most effective plan which can be pursued, is to restrain the patient from drinking for three or four hours before retiring. An eminent physician has suggested that the free use of meat by children encourages the habit. Whipping, unless the child is lazy or vicious, will do no good ; in fact, these measures are likely to do harm by exciting a nervous condition of the system, which will encourage the very thing to be corrected. Wearing a wet bandage about the lower part of the bowels at night is a very useful measure. To prevent the patient from sleeping upon the back, a good remedy is to tie a knot in a towel, and place it about the body in such a way that the knot will come at the center of the back.



THE HOUSEHOLD

Worms.—Various kinds of worms infest the human body. Children are particularly liable to them. For the small worms which are found in the rectum, perfect cleanliness, regularity of the bowels, daily enemas of salt water, and anointing the anus with sweet oil are the best remedies. Indigestion and constipation are the chief causes.

Tape-worm and the large round worm require more energetic measures of treatment. For the first, the best remedy known is the seed of the common pumpkin. Take two ounces of fresh seeds, remove the shells, and beat them to a paste with an equal quantity of finely pulverized white sugar. Add a little milk or water, and take at one dose after fasting twenty-four hours. After three hours, take a tablespoonful of castor oil. If this does not dislodge the worm, there probably is none. Many people imagine they have tape-worms when they have not. For a child, the dose should be about one half that for an adult. The fluid extract of the seeds can be obtained at the stores, the dose of which is one half a fluid ounce.

For the round worms, chenopodium, or worm seed, is one of the best remedies. For a child two or three years old, give half a dram of the seed in sirup or honey, night and morning, for three or four days in succession. After the last dose, give a teaspoonful of castor oil. Five or

ten drops of the oil may be given with sugar, in place of the seed.

Goiter.—The cause of goiter is very obscure. It has been attributed to scrofula, to the use of hard water, to cloudy weather, and to low latitudes; yet it appears under circumstances in which none of these conditions would surely account for it. There are many cases to be found in the Swiss Alps; in fact, it is quite fashionable there, among men as well as among women, to have a large goiter, of the size of which many seem to be proud. In certain of the cantons, shut in by high mountains, where the sun shines but a few hours of the day, it is found that persons having this disease improve if they are removed farther up the mountains, where it is dryer and more sunny; and so a hospital has been built there for their accommodation. Goiter often begins in children not more than ten or twelve years of age, and is accompanied by a weakening of the mental powers. The use of iodine, though a popular remedy, is very uncertain; it may drive the swelling away, but it usually returns after a little. The improvement of the general health and the use of electricity are the best remedial agents known. A goiter which has become very hard and firm cannot be cured except by a somewhat dangerous surgical operation.

Stammering.—Stammering is a real disease.

It is sometimes induced by imitation of others, in those who have no natural impediment of speech. An English medical journal gives the following as a remedy for stammering: "Do not speak or attempt to speak when inhaling the breath, but draw as much air into the lungs as they will hold, and then speak very slowly. Repeat this operation, and by patient perseverance the habit may be completely overcome." One of the causes of stammering is attempting to speak with the lungs only partially filled. Speak only with deliberation, in a firm, rather loud voice, and stop speaking instantly when the slightest embarrassment is felt.

Food for Feeble Children.—In many acute diseases of childhood there is so great stomach disturbance that ordinary food cannot be taken. In cases of this sort, a mixture consisting of equal parts of lime water, milk, and white of egg, will often be retained when nothing else can be, and thus the little patient will be nourished until the vital functions of the stomach are resumed.

Thumb-Sucking.—The popular idea that thumb-sucking is injurious to an infant's health, is combated by a prominent English physician, who insists that thumb-sucking is not only not injurious, but actually beneficial. The following are his arguments in favor of this infantile practice, which certainly seem to us to be

harmless enough : "Sucking the thumb causes the salivary glands to pour out their secretion, thus moistening the mouth, and aiding digestion. The pressure of the thumb eases, while the teeth are 'breeding,' the irritation and pain of the gums, and helps, when the teeth are sufficiently advanced, to bring them through. Sucking of the thumb, moreover, makes a cross infant contented and happy, and frequently induces a restless babe to fall into a sweet, refreshing sleep. After dentition is completed, it is likely to become a habit with a child ; in that case, it may be readily cured by smearing the thumb with a paste of aloes and water. One or two applications will probably be sufficient."

Measles.—Ordinary cases require little more than care and good nursing. The comfort of the patient is greatly increased by frequent tepid sponge-baths or packs. If the eruption does not appear promptly, or is repelled, put the patient into a hot pack, with a woollen sheet, for thirty minutes. Keep the head constantly wet with cool water, and bathe the face every few minutes when there is considerable fever. If the throat is sore, give treatment for sore throat, as already described. Give the patient abundance of fresh air, but do not expose him to draughts. The diet should be as simple as possible, and very light.

Scarlet Fever.—This disease may be treated

essentially in the same manner as measles. The sponge-bath should be administered several times a day. Keep the bowels free by enemas.

Vitality of Scarlet Fever Contagion.—A medical journal records a case in which a family of children contracted scarlet fever from the clothing of a servant who had nursed a case of scarlet fever more than a year previous, the clothing in the meantime having been kept in a trunk.

Fevers.—Simple fevers may be treated in accordance with the directions for measles and scarlet fever. If complications occur, as pleurisy, lung fever, or other affections, a physician should be consulted.

Mumps.—This common affection needs little more than careful nursing. A spare diet, rest, and a daily warm bath facilitate recovery. If the diseased parts are very painful, treat as for sore throat. Keep the feet warm. If the breasts or testicles become inflamed, apply ice, or alternate hot and cold treatment.

Whooping Cough.—No method of treatment will cure this disease, but in ordinary cases the patient will get well of himself in due time. Good care, plenty of fresh air, a warm bath three or four times a week, and plain, nourishing diet, are the best means to secure a speedy recovery.

Dysentery.—This disease consists of an inflammation of the large intestine, or colon. In

mild cases, the disease is limited to the rectum. The local inflammation is accompanied by general fever, together with the discharge of mucus, with more or less blood. The cause of the disease is sometimes obscure ; improper diet, bad water, foul air, or exposure to the wet during the hot months, may be mentioned as among the most common causes.

In treatment, energetic measures should be used to diminish the local inflammation, and to subdue the general fever. This may best be done by the use of fomentations and compresses over the bowels and abdomen, together with the wet-hand rub and wet-sheet pack, administered as frequently as the severity of the case demands. Great care should be taken to keep the extremities thoroughly warm. If the head is unnaturally hot, cold applications may be made to it. If spasms occur, great relief may be obtained from applications of ice or very cold water to the head and upper portion of the spine. Local pain may be greatly relieved by the use of warm or cool enemas. Keep the patient very quiet. His food should be such as will be easily digested, and of such a character that it will not be a source of irritation to the mucous membrane.

It is an erroneous notion that fruit is a cause of this disease. It may be occasioned by eating unripe fruit ; but the immaturity of the fruit is

the cause of the disturbance, being a source of irritation to the intestinal canal on account of its indigestibility. Ripe fruit not only does not occasion dysentery, but some kinds of fruit, as blackberries, raspberries, and grapes, are conducive to recovery when freely used. Fruit is rarely harmful if eaten properly, being taken at meals only, in moderate quantity, and thoroughly masticated.

Cramps.—Relief is given by the hot or cold douche, hot fomentations, rubbing with cold water, and by pressing the affected muscle against some hard body, or grasping it firmly with the hand. Cramp in the stomach may require an emetic of warm water, with a hot sitz-bath and foot-bath in addition to fomentations.

Pain.—Acute pain is usually due either to inflammation or neuralgia. Hot applications are nearly always the most grateful and the most successful of any local remedy. Hot fomentations are the most convenient means of applying heat, though hot bricks, bottles or rubber bags filled with hot water, and heated sand-bags are equally serviceable in many cases. Sometimes, however, cold applications are the most grateful and efficient. The patient's feelings will determine which should be employed. The hot foot-bath, or the foot-bath and sitz-bath combined, is sometimes necessary in addition to local measures.

Sand-Bags.—Hot-water bottles and rubber bags are excellent to relieve pain ; but a good substitute, and one always ready for use, is a sand-bag. It may be made by putting a few pounds of clean sand into a flannel bag, and then slipping over it another bag made of close cotton cloth. It can be quickly heated in an oven.

Face-ache.—Pain in the face is generally of a neuralgic character. Frequently it originates in a diseased tooth. Make hot applications in any of the several ways described. Occasionally it happens that cold applications are best. The foot-bath, sitz-bath, and abstinence from food are useful auxiliaries of treatment. When due to constitutional causes, as the use of tea, coffee, tobacco, or liquor, or to an impoverished condition of the blood and general derangement of the nerves, the disease is very obstinate, and requires constitutional treatment.

Toothache.—This painful affection is often closely connected with face-ache. It may be due to a decayed or ulcerated tooth, or to disease of the dental nerve. Apply the same remedies as directed for face-ache. In addition, apply half a steamed fig (hot) to the diseased tooth. A bit of cotton saturated with laudanum or creosote, and crowded into the cavity of a carious tooth, will often give speedy relief. The only proper and permanent remedy, when the

tooth is decayed, is to have it filled or extracted. It should be filled if possible.

Care of the Teeth.—The best dentifrices are white castile soap and menthol. Cleanse the teeth carefully on going to bed at night and on rising in the morning, with a little castile soap and a soft brush, rinsing the mouth with water containing one or two grains of menthol to the ounce. Remove all particles which may lodge between the teeth, by means of silk threads. Dentifrices which do not contain soap are of little or no account, and the other things which popular tooth lotions contain are of no value except as flavors, and some of them are injurious. In the latter class must be placed salicylic acid.

Softening of the Brain.—So-called softening of the brain is usually not softening of the brain; it is simply congestion of the brain from bad food, bad air, late hours, dissipation, lack of exercise, and sundry other causes. Healthy food, a daily bath, abundant sleep, and plenty of exercise in the open air, will cure nearly every case in a short time.

Consumption.—Is consumption curable?—It is, if taken in time. The following hints, if carefully followed, will arrest the disease in its early stages:—

1. Avoid all the causes of the disease, chief among which are breathing air which has been

previously breathed, sedentary habits, late hours, and exposure to extremes of temperature.

2. Live in the open air at least seven hours a day. Exercise sufficiently to produce moderate fatigue, but not exhaustion. Walking and horse-back riding are good exercises.

3. Fill the lungs to their utmost capacity several times in succession, every hour of the day at least ; and cultivate the habit of deep breathing. Do not strain the lungs by holding the breath long. Keep the shoulders well thrown back.

4. Avoid all kinds of stimulants and stimulating food. Eat the most nourishing kinds of food. The chance for recovery largely depends upon the amount of nutriment which can be well digested and assimilated.

5. Take a thorough tepid sponge-bath, followed by a dry-hand rub, three times a week. The whole body should be thoroughly rubbed with the dry hand each morning.

6. Wear flannel the year round ; thick in winter, thin in summer. A silk under-suit is an excellent protective.

7. Avoid every form of cough sirup, balsam, cough mixtures, lozenges, expectorants, etc., etc., no matter how strongly recommended. Cod-liver oil, fat pork, bullock's blood, and similar remedies are as useless as absurd and disgusting.

Be sure to begin in season. A few months' delay has often sacrificed the last chance. "Throw physic to the dogs," obey the laws of nature, and trust in nature's God.

To Stop Hemorrhage from the Lungs.—Apply hot fomentations to the spine, to the back of the neck, and also between the shoulders. Apply cloths wrung out of cold water about the neck, and over the chest. If possible, have the patient inhale, with an atomizer, a one-per-cent solution of per-chloride of iron.

The Proper Temperature of a Room.—For the majority of people, a temperature of 70° is necessary for health and comfort. Elderly people usually require a somewhat higher temperature. The temperature maintained in dwelling-houses and hospitals in England, we found to be about 60° ; but this seemed to us too low, as we were never quite comfortable, and we found other persons, not natives of England, making the same complaint. A Scotch physician declared in our hearing, before a large audience, that during a residence of twenty years in England, he had never once been warm. Nevertheless, the generality of people born in that country, seem to require no higher temperature.

Crick in the Back.—This curious malady is sometimes relieved as quickly as produced, by relaxing the back by bending backward across

a log or fence. Hot fomentations, with vigorous rubbing, usually give ready relief.

Stitch in the Side.—Hot applications usually give prompt relief. A tight flannel bandage should be worn about the trunk after the fomentation has been given.

Lumbago.—Alternate hot and cold applications, followed by thorough rubbing and percussion, are the best local applications. Rest in bed, systematic treatment, and attention to the general health, are also required in many cases.

Hot Water for Torpid Livers.—Two Polish physicians have been making experiments for the purpose of ascertaining the effects of alkaline mineral waters upon the liver. Their results indicate that alkaline waters increase the quantity of bile when taken freely. These experiments also included observations upon the effects of hot water upon the liver, the conclusion being that hot water possesses the same properties as alkaline waters. We have proved, in a large number of cases, that the use of hot water is one of the most effective means of encouraging a torpid liver. When the liver is torpid, there is usually a red sediment in the urine. From six to eight glasses of hot water should be taken daily until the sediment disappears.

Spring Biliousness.—Biliousness, so common in the spring of the year as to have acquired the seasonable title, "spring sickness,"

is a condition of the system in which there is too little bile produced, instead of too much. The waste elements, which ought to be removed from the blood by the liver in the form of bile, are left in the body, and accumulate in the tissues. It is this that gives the dingy color to the white of the eye, the dirty hue to the skin, and the coppery taste to the mouth, and which produces the giddiness, the floating specks before the eyes, and the general feeling of languor and discomfort which characterizes the condition commonly known as biliousness. This dingy hue of the skin is actually due to the accumulation of waste matter, or organic dirt. The skin is dirty, perhaps not upon the surface, but all through its structure. Not only the skin, but the muscles are dirty; the brain and nerves are dirty, and the whole body is clogged with dead and poisonous particles, which ought to have been promptly carried out of it, but have been retained on account of the inefficient action of the liver.

The causes of biliousness are various. One of the most frequent is overeating. If you press your fingers close up under the ribs on the right side of the body, you can feel the lower border of the liver about an inch above the lower edge of the last rib. If you do the same after having eaten a hearty meal, you will find the lower border of the liver half an inch farther down. This is due to the fact that the liver becomes enlarged



through the absorption of digested food after a meal has been taken. If you eat a very large meal, say twice as much as you usually eat, and then feel for the lower border, you will find it reaching down to a level with the lowest rib, showing that the liver is very greatly enlarged, much more than it should be. If you go on eating too much in this way, day after day, week after week, after awhile the vessels of the liver will be so relaxed by frequent distension that the organ will grow permanently enlarged and congested. When in this condition, the liver cannot make bile readily, and so does not do the proper amount of work ; and the waste elements which it ought to remove from the body are left to accumulate in the tissues, and all the symptoms of biliousness follow.

Biliousness is sometimes the result of eating too freely of fats. Animal fats being particularly difficult to digest, and likely to be taken in too large quantities, in the shape of butter, lard, suet, and fat meats, are apt to produce this condition.

The excessive use of flesh food, also, renders the liver torpid, and produces biliousness. Flesh food generally consists of albumen, a nitrogenous substance, which can be used in the body only in a very limited amount. The average person can use only three ounces of this kind of material each twenty-four hours. Now, if he

eats meat sufficient to supply four ounces of nitrogenous matter, the extra ounce must be carried off by the kidneys in the form of urea, or uric acid, and this must be acted upon by the liver, to prepare it for removal by the kidneys. If the liver has more of this work to do than it should have, the work will be imperfectly done, and much waste matter, which ought to be removed, will be left in the system, producing biliousness, rheumatism, muscular pains, sick headaches, and many other uncomfortable symptoms. Persons suffering from these causes will often notice sediment in the urinary secretion. This is, in fact, one of the most common causes of the sediment, or deposit, ordinarily found in the urine.

These facts respecting fats and flesh food explain the reason why one loses his appetite for such substances, and craves fresh vegetables, acids, etc., in the spring of the year. The repugnance to rich foods and flesh food, which nearly every person feels in the spring, is nature's protest against the use of those articles at that season of the year. During the winter season, the extra supply of oxygen received in the condensed atmosphere enables the system to dispose of waste matters more readily than during the warm season; and hence those substances which tax the liver can be taken with greater impunity during cold months; but when

warm weather approaches, the accumulation soon becomes so great that nature makes a vigorous demand for a change of habits in the matter of diet. If her suggestion is not readily received and acted upon, she follows it up with a vigorous reminder in the shape of a "bilious attack," "spring sickness," a "gastric fever," an attack of "liver complaint," diarrhea, or some other expression of her displeasure.

Still another cause of biliousness, arising from torpidity or inactivity of the liver, is the use of condiments,—such substances as mustard, pepper, pepper-sauce, ginger, Worcestershire sauce, vinegar, and other things which have an acrid or burning flavor. How any one could ever have learned to relish substances which burn and sting as they go down the throat, is one of the mysteries of dietetics which we have never been able to solve. Certain it is that a substance which will raise a blister on the skin in fifteen minutes, as mustard or cayenne pepper will do, is capable of doing mischief on the inside of the liver, when it gets there through absorption from the stomach. If you put a little pepper in the eye, it makes the tears flow, and presently the eye becomes blood-shot. Mustard or pepper in the liver does not make it smart, since it has very few nerves of feeling; but causes the blood-vessels to enlarge, and, probably, at first increases the amount of bile pro-

duced ; but the effect of continued use is just the same as would be the effect upon the eye, if a little pepper were put into it every day. Such an eye would, after awhile, become so inflamed that it would be blood-shot and congested all the time. So the liver, by the habitual use of condiments, becomes permanently congested ; and a congested liver is a torpid liver, capable of making less bile than is necessary to maintain the system in a state of health.

But there is still another cause of biliousness which is quite frequently overlooked. The liver needs oxygen to carry on its business of bile-making and sugar-making, and the various other kinds of work it has to do. The amount of oxygen in the blood depends upon the amount of air taken into the lungs. If a man stops breathing, he very quickly gets black in the face, because the oxygen of the blood is consumed so rapidly that the blood quickly acquires the dark color it has when it contains little or no oxygen. If we exercise out-of-doors on a cold winter's day, we come in with cheeks and lips rosy with the glow of health, because they are filled with bright blood, rich in oxygen. When we sit quietly in-doors in heated rooms, and take little or no exercise out-of-doors, we do not expand our lungs well, and consequently receive very little air into the blood, and the little we

inhale is poor in oxygen. As the result, the whole body suffers for want of this life-giving element, the liver with the rest. Not being able to make bile without oxygen, and its supply being insufficient, it makes too little bile, and allows the waste elements, which should have been removed through this channel, to accumulate in the body. Thus a person becomes bilious from sedentary habits.

We must not overlook the fact that the use of strong tea and coffee, and especially the use of tobacco and alcoholic drinks, are among the most ready means of producing biliousness. All smokers and drinkers are more or less bilious, and the tawny complexion of strong tea and coffee drinkers is undoubtedly due to the bad effect of these beverages upon the liver.

The remedy for biliousness is plain enough,—Stop abusing your liver. Give it an easy time for a few weeks, and see what a wonderful change will occur in your feelings. Live simply, bathe frequently, and take plenty of outdoor exercise. The liver will go about its work in the most cheerful manner possible, if it has half a chance.

Purifying the Blood.—It is a popular notion that the blood can be purified by swallowing some bitter stuff or nauseous medicine. Many years ago, Dr. Bacon announced the theory, that everybody should be bled in the spring, and

treated with purgatives, because the blood became so vile during the winter that it was necessary to purify it by emptying the blood-vessels. This was undoubtedly one way, and a robust person might suffer no real harm from the treatment ; but it would be very difficult for a feeble person to overcome the debility, and furnish a new supply of blood. The idea was good, but in such a radical change the process of cure was so effective that it many times killed the patient. "Cured to death," might truthfully be written on a great many tombstones.

The modern idea that the blood is to be purified by antidotes, is wholly unphilosophical. It is absurd to think that you are going to make the blood pure by putting something impure into it. The best way is to set to work nature's five great purifiers, the lungs, skin, liver, kidneys, and bowels,—the five great excretory organs of the body. If a man's blood is impure, it is because he has been taking something impure into it, or because he has not been using the excretory organs sufficiently to keep the impurities worked out. People who live grossly, eating flesh meats, pastry, etc., and perhaps swallowing such things as tea and coffee, wine and beer, and maybe tobacco, are constantly overtaxing the excretory organs. Living a sedentary life is another way to encourage the deposit of impurities in the blood, there not being sufficient muscular ex-

ercise in such cases to assist in throwing off the waste particles of the body.

To make the skin more active, take a hot bath once, twice, or three times a week. If vigorous, one can stand a Turkish or vapor bath every day for awhile. Do anything to induce a sweat; drink hot water, and wrap up in warm blankets. A good vapor bath can be taken in any ordinary bath tub by putting a slat bottom in the tub, or a board with holes in it, so as to allow a space at the bottom of the tub which will be free for a running stream of hot water. Lie down on this slat bottom, cover the tub with heavy blankets, and you will have as good a vapor bath as need be given. A Swedish shampoo, or a soap-and-water bath, or scouring the skin off with a brisk "salt glow,"—any or all of these ways are good for getting up a healthy action of the skin.

Next, endeavor to make the lungs work so vigorously as to increase the supply of oxygen. A person walking at the rate of three miles an hour, breathes three times as much air as one who is sitting still; and one walking at the rate of four miles an hour, breathes five times as much as one sitting still. When sitting, one only breathes about twenty cubic inches—about two thirds of a pint—at each inhalation, the furnace door of the body being almost closed; but as just noted, even moderate walking triples the

capacity for taking in air. With every breath we throw off a certain amount of impurities ; at the four-miles-an-hour pace we may not throw off five times as much waste matter as when sitting still, but we will approximate that amount, perhaps about four times as much. Another advantage in deep breathing is, that the oxygen taken into the lungs goes into every nook and cranny, and gets alongside every nerve and fiber of the body—everywhere this clogging material is lodged, and carries it out. It is a great house cleaner ; it sweeps down the cobwebs, and shakes the curtains. That is why the skin looks clearer and fresher. Let a person whose skin is dingy, dirty, and sallow, go out of doors and take regular and vigorous exercise. The fresh supply of oxygen thus gained will very soon tell upon the appearance of the skin.

The liver may be set to work, and by the same means the bowels and the kidneys can be made more active, and that is by simply drinking large quantities of hot water. The old German water-cure doctors found this out almost a hundred years ago. Old Dr. Pressnitz, of Graefenberg, used to recommend from twelve to twenty glasses of water a day, to be taken in connection with mountain climbing. There were beautiful springs along the mountain side, and his patients, walking and climbing, would drink from six to twelve glasses before break-

fast, and the dose could be repeated two or three times in the course of the day. Water is the best means for cleansing the stomach, liver, and kidneys. Every part of the body is permeated and cleansed. When we take water into the stomach, it is absorbed; and by the muscular action of the diaphragm, this pure water is drawn into the body, and in its removal carries impurities out.

It is very interesting to notice how all these remedies co-operate;—warm baths to make the skin active; exercise to make the lungs more active; and hot-water drinking to increase the activity of the kidneys, bowels, and liver. The warm baths take some of the fluids out of the blood. Persons may lose even two pounds—that means two pints of water—through the skin in a hot bath. This excretion carries with it a large quantity of impurities; and this makes a person thirsty, and increases the amount of water-drinking, which supplies the water taken from the blood, while the water-drinking promotes the sweating,—action and reaction, constantly. By exercise the lungs are made to act more vigorously. This increases the action of the diaphragm, thus squeezing the liver and pressing the old bile out of it; and this, again, augments the water-drinking. Again, exercise induces perspiration, and that, in turn, also increases the water-drinking. Each means helps

the others all the time, and in this way the blood is readily purified.

Boils.—The application of heat and cold alternately will sometimes disperse a boil in the early stage. When it becomes painful, apply hot fomentations frequently, with the wet compress during the intervals, or apply continuously a soft poultice. The wet compress covered with oil-silk has the same effect as the poultice. The kind of poultice is quite immaterial, if it be non-irritating, for its only valuable properties are warmth and moisture.

When the boil is ripe, that is, when a little white vesicle appears near the surface, its cure may be hastened by lancing with a sharp knife. The discharge may be encouraged by gentle pressure; but squeezing boils is a very harmful process, and greatly retards their cure. If they do not discharge freely after opening, poultice or apply fomentations. Applications for the treatment of boils, to be effective, should be made to the surrounding tissues as well as to the boil itself.

A carbuncle is simply a large boil. A sty is a small one upon the eyelid. Treatment for each is the same as for ordinary boils.

It is a mistaken notion that the purulent matters discharged from boils are concentrated impurities which previously existed in the blood. The pus itself is made up of the white blood cor-

puscles, the most precious part of the blood. The discharge contains impurities, but most of them are the result of the death of the tissues which have suffered in the inflammation. It is yet an undeniable fact that many persons experience an improvement in health after having several boils, whatever may be the explanation. The contents of a boil are very poisonous to the system when absorbed into the blood. Boils are probably due to germs.

Ulcers.—Old ulcers on various parts of the body are frequently very offensive as well as painful. To remove the odor emitted by the discharges, wash the ulcer thoroughly twice a day in a weak solution of carbolic acid or permanganate of potash. This application will also do something toward healing it, but water-dressing and a strict diet are the best remedial agents.

Lice.—Animal parasites of various kinds which infest the body, abound only when their presence is encouraged by filth. They usually disappear very quickly when absolute cleanliness is preserved. If they do not at once vanish, the application of an ointment made of one part of Scotch snuff to two of lard will speedily destroy them. This ointment is quite poisonous, and should be quickly removed after thorough application.

A Simple Remedy for Hernia.—A child of three months old was suffering from umbilical

hernia, or protrusion from the navel. The truss which had been provided, produced so much irritation that it was necessary to remove it. The doctor improvised a remedy which worked admirably, by taking one fourth of an ordinary skein of soft white yarn, and tying a knot in the middle, and then tying the yarn about the body, placing the knot in such a position as to rest upon the protrusion. After wearing this simple appliance for two or three months, the child was entirely cured.

Care of the Sick.— Every physician knows that in the majority of cases much more depends upon the care which the patient receives from his nurse, than from himself. A careless nurse has often turned the scale, which hung nearly evenly balanced between life and death, adverse to recovery. The following are some of the more essential matters which demand attention, though nothing can supply the native tact and grace which are necessary to make a good nurse :—

1. Secure a constant supply of pure air from outdoors. It is not sufficient to open a door leading into another room. Cold air may be very impure. Be careful to exclude the air from the kitchen and wash-room as perfectly as possible.

2. Admit the light and sunshine freely. Direct sunlight is sometimes unpleasant to the patient ;

if so, shade the windows with white curtains, which will admit the light. In a few diseases it may be necessary to keep the patient in a darkened room for a few days.

3. Maintain an equable temperature. More fire is needed in the morning and evening than at noon. Regulate the heat by a thermometer hung near the bed. The mercury should never be above 70° . Old people especially need attention in this particular. A fall of a few degrees in temperature is often fatal to them. Avoid draughts.

4. The linen of the patient, and his bedding, should be changed every day at least. Daily washing will not be demanded in all cases, but the clothing should hang for several hours near a heated stove to air and dry.

5. Food for sick people should always be simply and neatly prepared. Light food is usually the best. Condiments should be very sparingly added, if at all. Oatmeal gruel is one of the best articles of food for the sick. Fruit may be freely allowed if of good quality and ripe. Beef tea and broth will not sustain life. A dog starved sooner on a diet of beef tea than he would have done with nothing at all. Give food regularly, as in health; continual dosing with milk or any other food is harmful.

6. The patient himself should be kept scrupulously clean. The whole body should be washed

several times a week at least. The mouth and teeth should be daily cleansed.

7. All discharges should be kept in covered vessels, and removed from the room at the earliest moment possible.

8. The sick chamber should be made pleasant by tasteful arrangement of its furnishings, by flowers, simple pictures, etc. Frequent change in the aspect of the room is desirable.

9. The patient should never be kept in a state of expectancy ; when a promise is made him, fulfill it promptly.

10. Whispering or low talking in the sick-room or adjoining rooms will arouse the patient's fears unnecessarily. Avoid it.

11. Hasty movements in the sick-room are always annoying to a patient. A calm, deliberate air on the part of the nurse inspires confidence.

12. Arrangements for the night should be made before the patient becomes sleepy, so that he may not be disturbed. Otherwise, the movements necessary in making the needed preparations may cause him to become so restless that sleep will be impossible.

13. All avoidable noises should be prevented. Creaking doors, squeaking boots or shoes, a swinging blind, or a flapping curtain, are intolerable to the sensitive ears of invalids. Coal should never be poured from the scuttle upon the fire. Bring

it into the room in small parcels wrapped in damp paper. These can be laid upon the fire noiselessly.

14. If the patient can sleep, let him sleep. Never think of waking a sick person out of a sound sleep. Refreshing sleep will do him more good than all the medicines and baths in the world.

15. The covering of the patient in bed should be several light, porous blankets, rather than one or two heavy ones.

16. Strangers and visitors should be prohibited from entering the sick-room of a feeble patient. Visiting will often determine a fatal issue of the disease.

17. Water kept in a sick-room should be often changed. Never drink that which has been in the room for more than a few minutes.

18. Always wear a cheerful face. Do not look solemn and anxious, even though the case may be grave.

19. Never annoy the patient by questions or too much conversation.

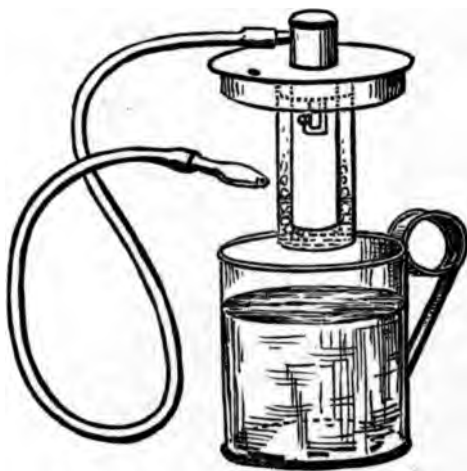
20. Always recollect that nature must cure. All you can do is to make the conditions as favorable as possible.

The Treatment of Diphtheria. — As this grave disease prevails extensively at times, a few hints respecting its proper management will no doubt be of interest :—

1. It must be remembered that diphtheria is a germ disease, *i. e.*, it is due to the reception into the system of germs of a specific character. The gravity of the disease, in any particular case, depends upon the condition of the system of the patient when the germs are received, and upon the number and activity of the germs introduced. The disease seems to be closely allied to ordinary tonsillitis. Indeed, it seems hardly possible to distinguish between a case of mild diphtheria and a case of tonsillitis. The theory is held by some eminent authors that there is really no difference between these two maladies, but that diphtheria, which in its most characteristic form presents, as one of its features, a peculiar membrane upon the diseased surface, is only a sore throat of unusual malignancy. There seems to be a close relation between this disease and erysipelas. Recent researches seem to show that diphtheria and croup are really one and the same disease.

2. It is evident that in the treatment of this disease, agents capable of destroying germs, or of delaying their development, must be of service. The difficulty in the use of these agents is, that if employed in sufficient strength to destroy germs, they are injurious to the tissues. Spirits of turpentine is about the only exception to this rule, and on this account is an excellent agent in cases of this kind. It is best taken by

means of the steam inhaler, and should be used regularly, several times a day, for at least five minutes, from the time the child is exposed to the disease. Use one half teaspoonful of turpentine in the outer cup of the steam inhaler, placing only water in the inner cup. The construction of the steam inhaler is shown in the



accompanying cut. It can be obtained from the Sanitary Supply Co., Battle Creek, Mich., or can be made by any tinsmith. It will be well, also, to keep constantly evaporating upon the stove, or over a lamp in the sick-room, a half ounce of turpentine in a basin of water. As soon as the throat assumes a red, swollen appearance, and there is a decided rise of temperature, cold ap-

plications should be made to the throat and tonsils by means of an ice-bag, or cloths wrung out of iced water, every hour. Once in two hours, fomentations should be applied to the throat, for fifteen minutes. If there is much pain, fomentations may be applied for ten minutes, hourly.

If the inhalation of turpentine causes much coughing, and irritates the throat, the steam inhalation may be taken without it a part of the time. It should be used for five or ten minutes, every hour. When a different membrane makes its appearance, the same measures should be continued assiduously, and the membrane should be painted, every half hour, with a solution of papayotin, or vegetable pepsin. The following is a good formula: Papayotin, 75 grains; distilled water, $1\frac{1}{2}$ drams; glycerine, 4 drams. Apply to the membranous patch with a camel's-hair brush. It is also well to apply to the throat, hourly, in the form of a spray, a solution of boracic acid, or chlorate of potash. In the case of adults, a saturated solution of chlorate of potash may be used; for young children, the solution should be one fourth saturated. Boracic acid may be used, for both adults and children, in the saturated solution. It should be applied with an air atomizer.

3. In favorable cases, the membrane disappears in two or three days, and sometimes in twelve or twenty-four hours. The separation of

the membrane is favored by the inhalation of steam. The use of the steam atomizer is exceedingly valuable for this purpose.

4. The general treatment of these cases is of even greater service than local treatment. The thing of first importance is the administration of water in large quantities. A child should be made to swallow a half glass of water every hour. Older persons may take a glassful hourly. Induce the patient to take the water hot, if possible, or at least warm, as this favors perspiration, which is important in this disease. If the child cannot drink a sufficient quantity of water, which should be not less than two quarts in the twenty-four hours, water must be administered by enema. In all cases, a large enema should be administered daily, to move the bowels; and where it is necessary, warm water may be introduced into the rectum several times a day, and allowed to remain. Perspiration should also be encouraged by a blanket pack, which should be administered twice a day during the first few days of the disease. This consists of wrapping the patient in a blanket wrung out of warm water. He should be kept in the pack from twenty to forty minutes, or until profuse perspiration is induced. After the pack, wrap him in a warm blanket to prevent his taking cold, and

to favor the continuance of perspiration to a moderate degree. The blanket pack relieves restlessness, lessens fever, and improves all the symptoms, besides aiding the separation of the membrane. Frequently children sick with this disease, with a temperature up to nearly $104\frac{1}{2}^{\circ}$, and in a state of almost complete collapse, have been brought back to consciousness, and so greatly improved in every particular within the short space of two hours, by the aid of the blanket pack, that the change seemed to be scarcely less than miraculous. In twenty-four hours patients will often be convalescent and make an excellent recovery.

5. It is most important that food should be administered in sufficient quantities to maintain strength. It should be light, consisting of fruit juices, gruels, milk, milk toast, boiled rice, and similar foods, excluding meats of all kinds, pastry, and everything difficult of digestion. If the child is unable to swallow, nutritive enemata of peptonized beef may be used advantageously.

Of course it is understood that cases of this disease are so grave that no person not medically educated should undertake the management of a case without the advice of a physician; but we feel sure that no intelligent physician would object to the measures here outlined. Copious water-drinking, and the use of the blanket pack,

we consider among the most important remedies. If to these be added the application of heat and cold to the throat, this short category will include the most valuable remedies for use in this disease.

Disinfection after Diphtheria and Scarlet Fever.—Through the active efforts of State Boards of Health, it is probably pretty generally known to the public that the above-named diseases, as well as all other contagious diseases, leave behind them an invisible something by which well persons may be infected, even after the lapse of a considerable period of time. It is, on this account, of the utmost importance that proper measures should be taken for the complete destruction of the germs by which these maladies are propagated and communicated. Disinfection is the only means by which this can be done. Ordinary scrubbing, whitewashing, and ventilation are useful, but are not sufficient. One of the most convenient and effective means of purification or disinfection is fumigation by the burning of common sulphur. The following is the best method of doing this :—

Into a tub or a large dish-pan pour water to the depth of an inch. Place in the vessel two bricks laid flatwise and near together. Set upon the bricks an old iron kettle. Put into the kettle a proper quantity of flour of sulphur mixed with an equal quantity of pounded charcoal. The quantity re-

quired is two pounds for each one thousand cubic feet of air. Mix with the sulphur and charcoal a few pieces of newspaper. Before the sulphur is lighted, all clothing and other articles in the room should be so disposed as to allow the fumes of the sulphur to come in contact with them to the fullest extent. The efficiency of the fumigation is also very greatly increased by saturating the walls, and everything the room contains, with steam. This may be very readily done by boiling water vigorously upon a stove in the room for an hour or two previous to lighting the sulphur. Dry sulphur fumes will destroy growing germs, but not the dried spores which may be collected upon walls and in cracks and corners. When all is in readiness, light the sulphur, and leave the room as soon as it is evident that it is going to burn well. If the door of the room communicates with other rooms, the crack around the door must be tightly closed by pasting thick paper over it. The room must be kept closed for twenty-four hours, at the end of which time it should be opened and left to air for another twenty-four hours, when it may be considered thoroughly disinfected.

Combating Germs in the Sick-Room.—

The part played by germs in the causation of many diseases, is now so well understood that it is not necessary to call attention to evidence bearing upon this important fact ; but informa-

tion respecting methods of combating germs is always of the greatest practical importance. We wish here to call attention to the importance of taking measures for the destruction of germs during the course of a contagious disease.

It is generally supposed that when a person has once been infected by a disease, he is infected as much as possible, and it is of no use to take further precautions against infection or contagion ; but the frequent occurrence of relapses in persons who have almost recovered from a contagious malady, as diphtheria or typhoid fever, points clearly to the conclusion that a patient may be re-infected in some way. Common sense suggests that a patient suffering from scarlet fever or diphtheria, must be infecting himself continually by breathing contaminated air. It has been observed for many years, and by the most eminent physicians, especially military physicians, that persons suffering from contagious diseases recover much more surely and rapidly when treated in an open shed or tent, even when suffering many disadvantages, than in the best-constructed and most perfectly appointed hospitals. The reason for this is obvious. The air of an open tent or shed is changed so frequently that there is no accumulation of the poisons which are thrown off from the lungs and the skin of the patient,

and hence the air is practically free from contamination.

Recognizing this fact, physicians and nurses have undertaken to purify the air of sick-rooms by various means. Good ventilation has been proved to be of the greatest value as a means of dispersing the germs ; but no value whatever attaches to the use of disinfectants in the room with a patient, such as chloride of lime scattered about, carbolic acid evaporating in a basin of warm water, the burning of disinfectant pastiles, etc. It is possible, however, to do much in the direction of destroying germs in the sick-room, and thus supplying the patient with air of greater purity, and hence with a better opportunity for recovery. Two rooms should be devoted to the patient. They should be near together, and should both be accessible from the hall or a communicating room, so that each can be used independently of the other. These rooms should be used on alternate days. On leaving the sick-room which has been occupied last, in the morning burn in it a quantity of sulphur, as directed in another article on disinfection after diphtheria and scarlet fever. Open the room at night, and air thoroughly by opening windows as wide as possible. In the morning, transfer the patient to the disinfected room, and proceed to disinfect the other room in the same manner. This method of disinfecting sick-rooms

is the only one which is of any value, and it has been tried in whooping-cough, with the result of greatly shortening the course of the disease. It is reasonable to suppose that it will prove equally effective in other contagious maladies also, if faithfully employed. The only objection is the amount of labor which it involves, but this is small compared with the labor saved by shortening the period of illness, and the suffering spared the patient thereby.

How to Destroy Typhoid Germs.—Typhoid fever is usually communicated through the discharges of typhoid-fever patients. The germs of the disease find their way to wells, water courses, and other sources of water supply, and thus other persons become infected. This means of spreading the disease would be wholly checked if the discharges of every typhoid-fever patient were properly and thoroughly disinfected. A saturated solution of copperas or sulphate of zinc will probably destroy the germs of typhoid, but there are other more positive means of disinfection. We will mention two as among the most valuable :—

A solution of two drams of corrosive sublimate to the gallon of water, will destroy all known germs. The objection to this disinfectant is that it is so poisonous that any one is likely to be killed by accidentally swallowing even a very small portion of the solution.

Another and perfectly safe method, which by recent experiments has been shown to be thoroughly effective, is the application of boiling water to the infectious discharges. Careful experiments show that the addition to the infectious material of four times its volume of boiling water, will effectually destroy the typhoid germs.

Cleansing Sick-Rooms.—A room which has been long occupied by a person suffering from chronic disease, or by a fever patient, or a case of smallpox or other contagious disease, ought to be very thoroughly cleansed before being occupied by others. The means by which this may be most efficiently done are these:—

1. Take out the windows, and give the greatest possible freedom to ventilation.
2. Remove the old paper from the walls, and burn it. Wash the bare walls with a solution of copperas, and then apply whitewash to the ceiling. Cleanse the woodwork with a solution of chloride of lime.
3. Remove the carpet from the floor, the bedding from the bed, and every other fabric from the room, and thoroughly disinfect them before replacing.
4. The most thorough and simple method of disinfecting a sick-room is that given under the head, "Disinfection after Diphtheria and Scarlet Fever."

Disinfecting Clothing.—Clothing which has been exposed to contamination by contagion, if of little value, should be destroyed. If more valuable, it may be disinfected in any one of several ways:—

1. Heat in an oven as hot as possible without scorching, for an hour or two. A temperature of 250° will do no harm.

2. If the clothing is uncolored, or colored with mineral dyes, soak a few minutes in a solution of fresh chloride of lime of the strength of one pound of the chloride to a pailful of water. Afterward boil.

3. Soak for half an hour in boiling water to which carbolic acid has been added in proportion of an ounce to the gallon of water. Boil again in pure soft water, to remove the smell of the acid.

4. Expose for several hours, in a close box, to the fumes of burning sulphur. Air thoroughly afterward, and wash.

Multiplication of Microbes.—Prof. Buckner, of Germany, has been studying the rate at which germs multiply, and has shown that the time usually required for one microbe, or germ, to become two, by the process of division, is fifteen minutes. At this rate a single microbe would produce in twenty-four hours a million million times the present population of the globe.

The Absolute Proofs of Death—are eleven in number :—

Cessation of Respiration Test.—The first of these signs of death,—the cessation of the indication of the respiratory function,—although useful in a general sense, is not by any means reliable. The old breath test—

“ If that a feather move across the breath,
Then life remains ”—

is too fallacious to be of real service, as is also the common mirror-test, a passive exhalation of water being quite sufficient to produce a deposit of moisture upon the bright reflector, even when life may be quite extinct.

Cardiac and Arterial Failure Test.—Of the two signs—the pulse and the sounds of the heart—the pulse is the more important.

Venous Turgescence Test.—The vein-pressure proof must be considered one of the very best and readiest of all. It is carried out by placing a hard substance, like a bit of mill-board, on the forepart of the wrist, so as to prevent pressure on the radial and ulnar arteries ; then a fillet is tied firmly around the wrist, so as to compress the veins at the back of the hand. If, upon this, the veins after a time fail to enlarge, there is *prima facie* evidence that no circulation is going on, and that life is certainly extinct. While this test alone is not sufficient to disprove the fact of life, it is the one least likely of all to deceive.

Reduction of Temperature Test.—Reduction of the temperature of the body below the natural standard is a good test, but it is one that must be used judiciously. A reduction of a few degrees is not sufficient, since recovery after seven degrees of reduction has been known to take place. But if the temperature of the body found in the cavities, like the mouth, is below the temperature of the surrounding air, or if it even be reduced to 80° , the evidence is strong that life does not remain.

Rigor Mortis Test.—The existence of well-marked *rigor mortis* is one of the most certain proofs of absolute death.

Coagulation of Blood Test.—The condition of the blood in the veins, whether it be coagulated or not, is a most important matter. The act of coagulation is practically the same as that of *rigor mortis*, and when the two signs are present together, there can be no doubt of the fact of death.

Putrefactive Decomposition Test.—Of putrefactive decomposition as proof of death, little doubt is ever entertained ; but while in its slightest development it cannot be accepted as conclusive, there are certain decompositions that are definite. Whenever decomposition of the eyeball is pronounced, with shrinking of the ball and opacity of the cornea, it may be considered convincing proof of death.

Strong Light Test.—The test made with strong light, in order to ascertain if in semi-transparent parts, like the hands, there is still redness of tint, is of secondary importance.

Electric Stimulus Test.—Considerable importance should be attached to the excitation of muscular contraction under electric stimulus. It is a test which is often urgently called for, and it has its own value. A small battery for the Faradic current, a couple of long needles to attach to the electrodes, and two sponges are required. The muscles of the forearm are most convenient for testing, the needles being pressed deep into the muscles.

The Ammonia Test.—The hypodermic ammonia test, suggested by Montiverdi, is of great importance. It is merely necessary in carrying it out, to inject thirty minims of ammonia solution, of sp. gr. 891°, under the skin. If there still be a circulation through the part receiving the ammonia, there will be a reaction in the form of a blotch of a red erythematous color, wine red, with raised spots on the surface. If death has taken place, instead of a red blotch there will be a blotch of a dirty skin color, without a trace of red spots, which Montiverdi affirms is the only criterion of actual death known at the present time.

The Bright Steel Test.—The oxidation, or bright steel, test of Cloquet and Laborde, has

the advantage of being simple and physiological, and may be used as corroborative of other tests, if nothing more. A bright steel needle may be thrust into a muscle, left there in position a short time, then removed and put in a dry place. If it remains bright, it has plainly pierced a dead tissue. From the nature of the circumstances, the time for this test must be limited to a very short period after the supposed death.

HYDROPATHIC APPLIANCES.

WATER, applied in the various modes in which it may be, is one of the most potent of remedies ; wrongly applied, it may be productive of great harm. The following are a few general rules which should always govern its use :—

1. Never bathe when exhausted or within three hours after eating, unless the bath be confined to a very small portion of the body.

2. Never bathe when cooling off after profuse sweating, as reaction will then often be deficient.

3. Always wet the head before taking any form of bath, to prevent determination of blood to the head.

4. If the bath be a warm one, always conclude it with an application of water which is a few degrees cooler than the bodily temperature.

5. Be careful to thoroughly dry the patient after his bath, rubbing vigorously to prevent chilling.

6. The most favorable time for taking a bath is between the hours of ten and twelve in the forenoon.

7. The temperature of the room should be about 80° or 85°.

8. Baths should usually be of that temperature

most agreeable to the patient. Cold baths are seldom required. Too much hot bathing is debilitating.

The following are brief descriptions of the more important baths applicable in the home treatment of disease :—

Sponge Bath.—This bath consists in rubbing the whole body with a sponge or towel wet in water of an agreeable temperature ; it is most useful for a general ablution.

Sitz Bath.—A tub made especially for the purpose, or a common wash-tub, may be employed. Place in the vessel sufficient water to cover the hips and lower part of the abdomen. During the bath, the patient or an attendant should rub and knead the abdomen. The water should be of a temperature ranging from 85° to 98°, according to the condition of the patient. Cover the patient during the bath.

Wet-Sheet Pack.—Spread two or three comfortables upon a bed or mattress, and place over the whole a woollen sheet. Wring out of water of the desired temperature a linen or cotton sheet. Spread it upon the bed, and let the patient immediately lie down in the middle. Then quickly envelop him in the wet sheet, wrapping him snugly from head to foot. Then cover him with the comfortables, and let him remain quiet as long as required. Elevate the head a little, and use care to have the feet warm. Half-packs may be taken in a

similar manner, confining the application to the trunk of the body.

Fomentations.—Wring out of water as hot as can well be borne, a folded flannel cloth, and apply it quickly to the part to be treated. Cover with a dry cloth, and change once in five minutes.

Pail-Douche.—This consists in pouring water from a pail over the shoulders of the patient. It is often employed to tone up the surface after a hot bath.

Chest-Wrapper.—The wrapper should be made of coarse cloth, shaped so as to fit the chest. Apply it after wringing just sufficiently to prevent dripping. Cover with a light, dry flannel wrapper. Change three or four times a day.

Half-Bath.—For this bath is required a vessel of sufficient size to allow the patient to sit upright, with his limbs extended. Enough water to cover the limbs, thighs, and lower part of the abdomen, is necessary. During the bath, the attendant should vigorously rub the limbs, back, chest, and abdomen of the patient.

Compresses.—Apply wet cloths in the same manner as in fomentations, wetting them in either cold, cool, or tepid water, according to the effect desired.

Rubbing-Wet-Sheet.—This bath consists in enveloping the patient in a wet sheet, and rubbing him briskly with the hand outside the sheet.

Hot Applications.—Besides fomentations, heat may be applied in several other ways. Bottles filled with hot water, hot bricks or stones wrapped in papers or cloths, hot cloths, bags filled with hot sand, salt, or cornmeal, and rubber bags filled with hot water, are convenient methods of applying dry heat.

Moisture and heat may be applied in a variety of ways also. Instead of wringing cloths out of hot water, put them into a steamer for a few minutes. This saves the trouble of wringing them. When there is no water hot, and a fomentation is wanted quickly, wring a cloth out of cold water, spread it between the folds of a newspaper, and lay the paper upon the top of the stove, or press it against the side. In a minute it will be hot. Wrap stones or bricks in a moist cloth. Poul-tices of various sorts answer the same purpose.

All hot applications should be renewed every few minutes until the desired effect is obtained.

Vapor Bath.—Place the patient in a chair which has a wooden bottom, beneath which place a pail half filled with water. Surround the patient completely, chair and all, with a woolen blanket, leaving only his head visible ; even this may be covered a little while at a time in cases of neuralgia, if desired. Add other blankets sufficient for warmth. Now raise the blankets a little, behind, and place in the pail a stone or brick which has been heated sufficiently hot to hiss

when it touches the water. Do not drop it into the water at once, but let it down gradually. When this becomes cool, add another in the same way. The bath should not usually be continued more than twenty minutes. Upon coming out of the bath, wash off quickly with tepid water. The head should be wet from the first.

Hot-Air Bath. — Prepare the patient in the same manner as directed for the vapor bath. Instead of the pail of water, place beneath the chair a cup containing a small quantity of alcohol. Wet the head well, and then light the alcohol. Wash with tepid water after the bath, and be careful to avoid taking cold.

Hot-Water Drinking. — From careful observation for a number of years, we are satisfied that many people drink too little. Copious water-drinking is one of the best possible means of encouraging the action of the liver, kidneys, skin, and bowels. Invalids with weak digestion suffer discomfort from drinking cold water copiously, on account of the depressing influence of cold upon the functions of the stomach. Hot water, however, is not open to this objection, and hence is to be recommended to invalids, especially to those suffering with almost any form of disease of the stomach, liver, skin, or kidneys. Water is the universal cleansing agent; and water-drinking is one of the most effective means of cleansing the blood. When taken hot, it stimulates the

action of the stomach and bowels, promotes the secretion of bile, encourages the action of the kidneys, relieves dryness of the throat, and secures a healthy activity of the skin. Hence it is particularly valuable for dyspeptics, especially those suffering with acidity, and for persons suffering with torpid liver and inactive kidneys.

Hot water, as well as other drinks, should be sparingly used, if used at all, at meals. When the digestion is very slow, a few sips of hot water at the close of the meal will be found a useful aid to digestion ; but hot milk may generally be substituted with advantage. The best time for taking hot water is one hour before the meal, and just before retiring at night. One or two glasses may be taken at a time. The temperature should be from 105° to 110° F.

Hot water is not a panacea, and is not best for everybody. Persons suffering with painful dyspepsia, ulcer of the stomach, and organic disease of the heart, should not take it.

Enemas.—An enema is a small portion of water thrown into the rectum by means of a syringe. The water may be either cool, tepid, or warm, as occasion may require.

The Colo-Clyster.—The enema taken in the ordinary way empties the lower bowel, but frequently does nothing more than this. In order to wash out the colon thoroughly, it is necessary that a large quantity of water should be admin-

istered, from three to four quarts, according to the size of the patient. Have the patient lie on his right side, with the knees drawn up. The water introduced will find its way readily into the transverse and ascending colon. A still more effective means is to place the patient in what is known as the knee-chest position. In taking this position, the patient first kneels upon the bed or couch, and then bends the trunk forward so that the head and chest rest upon the couch, the thighs being vertical.

Dr. Hall and a number of other charlatans have for some years been imposing upon the public by selling as a "secret" the idea that the bowels may be made to hold from one to four quarts of water, and that water may be usefully employed in this way. We have thoroughly exposed this fraud in the chapter devoted to medical frauds.

Inunction.—Pure olive oil or fresh butter may be used ; but vaseline, a fine unguent which can be procured of the druggist, is the best. After giving the patient a short bath of some kind, to cleanse the skin, dry him carefully, and then apply with the hand a very small quantity of the oil or unguent. Rub in very thoroughly, with much kneading and friction. Conclude by carefully wiping the skin with a soft flannel, to remove all superfluous oil.

ACCIDENTS AND EMERGENCIES.

THE injuries resulting from accidents, usually demand instantaneous action. A little delay or confusion, or misdirected effort, in a case of severe burning, drowning, or hemorrhage, will often sacrifice a human life. The following simple directions should be carefully studied, so that they can readily be made available at any moment:—

Drowning and Suffocation.—The chief remedy to be used in all cases is *artificial respiration*. There are several methods which are very serviceable. The following, which is the most approved method for restoring drowned persons, we copy from a publication issued by the Michigan State Board of Health, the Secretary of which, Dr. H. B. Baker, has kindly furnished us with cuts for illustration:—

TREATMENT OF THE DROWNED.—“Two things to be done: 1. Restore breathing; 2. Restore animal heat.

“**RULE 1.**—*Remove all obstructions to breathing.* Instantly loosen or cut apart all neck and waist bands; turn the patient on his face, with the head down hill; stand astride the hips with your face toward his head, and locking your fin-

gers together under his belly, raise the body as high as you can without lifting the forehead off the ground (Fig. 1.), and give the body a smart jerk to remove mucus from the throat and water from the windpipe; hold the body suspended long enough to slowly count *one, two, three, four, five*, repeating the jerk more gently two or three times.



“RULE 2.— Place the patient on the ground, face downward, and, maintaining all the while your position astride the body, grasp the points of the shoulders by the clothing, or, if the body is naked, thrust your fingers into the armpits, clasping your thumbs over the points of the shoulders, and *raise the chest as high as you can* (Fig. 2) without lifting the head quite off the ground, and hold it long enough to *slowly* count one, two, three. Replace him on the ground, with his forehead on his flexed arm, the neck

straightened out, and the mouth and nose free. Place your elbows against your knees, and your



hands upon the sides of his chest (Fig. 3) *over the lower ribs, and press downward and inward with increasing force* long enough to slowly count



one, two. Then suddenly let go, grasp the shoulders as before, and raise the chest (Fig. 2); then

press upon the ribs, etc. (Fig. 3). These alternate movements should be repeated from ten to fifteen times a minute, for an hour at least, unless breathing is restored sooner. Use the same regularity as in natural breathing.

“RULE 3.—After breathing has commenced, RESTORE THE ANIMAL HEAT. Wrap him in warm blankets, apply bottles of hot water, hot bricks, or anything to restore heat. *Warm the head nearly as fast as the body, lest convulsions come on.* Rubbing the body with warm cloths or the hand, and slapping the fleshy parts may assist to restore warmth, and the breathing also. If the patient can SURELY swallow, give hot coffee, tea, milk, or a little hot sling. Give spirits sparingly, lest they produce depression. Place the patient in a warm bed, and give him plenty of fresh air; keep him quiet.

“*Avoid delay.* A MOMENT may turn the scale for life or death. Dry ground, shelter, warmth, stimulants, etc., at this moment are nothing, — ARTIFICIAL BREATHING IS EVERYTHING — is the ONE REMEDY, all others are secondary.

“*Do not stop to remove wet clothing before efforts are made to restore breathing.* Precious time is wasted, and the patient may be fatally chilled by exposure of the naked body, even in summer. Give all your attention and effort to restore breathing by forcing air into, and out of, the lungs. If the breathing has just ceased, a

smart slap on the face, or a vigorous twist of the hair will sometimes start it again, and may be tried incidentally, as may, also, pressing the finger on the root of the tongue.

“Before natural breathing is fully restored, do not let the patient lie on his back unless some person holds the tongue forward. The tongue, by falling back, may close the windpipe, and cause fatal choking.

“If several persons are present, one may hold the head steady, keeping the neck nearly straight; others may remove wet clothing, replacing at once with that which is dry and warm; they may also chafe the limbs, and thus promote the circulation.

“*Prevent friends from crowding around the patient and excluding fresh air*; also from trying to give stimulants before the patient can swallow. The first causes suffocation; the second, fatal choking.

Do not give up too soon. You are working for life. Any time within two hours you may be on the very threshold of success without there being any sign of it.”

MARSHALL HALL'S READY METHOD.—This famous method consists, briefly, in laying the patient with his face downward, his arms folded beneath his forehead, and then slowly rolling him upon his side, restoring him again to his former position. By this means, the chest is

alternately compressed and expanded, thus imitating the movements of respiration. This method has been variously modified.

SYLVESTER'S METHOD.—This method, which has been proposed more recently, is highly recommended by many physicians. Raise the arms from the sides until they meet above the head; then bring them slowly back to the sides again, pressing them against the sides of the chest. Repeat this sixteen or eighteen times a minute. It is a very efficient means when skillfully applied.

Upon submersion in the water, the epiglottis, a little valve at the top of the windpipe, closes, shutting out the water from the lungs. After a time, the muscles relax, and the valve opens. Water then enters the lungs. After this occurs, there is no longer any possible chance for recovery; but as there is no ready means for determining accurately the condition of the lungs, every effort should be made to resuscitate the patient by the means already described. The length of time a person can live under water, will depend very much on the amount of pure air in his lungs at the time of submergence.

Poisonous Gases.—Carbonic acid (more properly, carbon dioxide) is the most common cause of suffocation. Chlorine gas, illuminating gas, the vapor of burning sulphur, ether, and nitrous oxide, or laughing gas, with other poison-



ous gases, produce death in the same way, though some of them are active irritants in addition.

Carbonic-acid gas is heavier than air, and in consequence, it accumulates in old wells, caves, deep valleys, and other low places. It is formed in mines in large quantities, at times, and is known to miners as "choke-damp." It is also formed in the vats of breweries, by fermentation. In the burning of limestone, also, it is produced in enormous quantities. When the kilns are opened, it sometimes pours out so rapidly as to suffocate the workmen before they can escape. Miners are often destroyed by a sudden gust of "choke-damp."

Old wells should never be entered without first testing the air at the bottom. Do this by lowering a burning candle. If it is extinguished, or burns feebly, carbonic acid is present, and descent would be extremely perilous. If it burns brightly, no fears need be entertained. If gas is found to be present, it can be dislodged by throwing into the well burning fagots or paper. Old cellars and cisterns are sometimes dangerous on the same account ; they may be tested in the same way.

Upon the inhalation of the first breath of carbonic acid, the person usually falls, and thus remains exposed to the poisonous effects of the gas. Under such circumstances, speedy and well-directed efforts are necessary to prevent death.

In a burning building, the purest air is near the floor, as the smoke containing the carbonic acid is hotter than the air when first formed, and rises. In escaping from a burning building, it is sometimes advantageous to go upon all fours so as to breathe the best air.

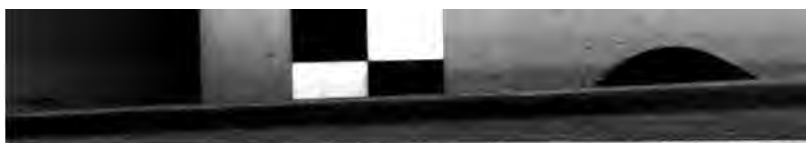
Charcoal burning in a room in an open vessel, will produce large quantities of carbonic-acid gas in a short time. In France, suicide is often committed by this means.

Illuminating Gas often escapes into sleeping-rooms through leakage of the gas pipes, or by reason of failure completely to shut off the supply to the burner upon extinguishing the flame.

People unaccustomed to the use of gas are sometimes so thoughtless as to blow out the flame as they would that of a lamp or candle, leaving the gas to find unobstructed egress. Many lives have been lost in this way.

Hanging is another means by which the supply of air to the lungs is cut off, causing asphyxia. A red line around the neck is usually indicative of this manner of producing suffocation.

The remedies in all cases of suffocation are essentially the same. Remove the patient from the cause, or *vice versa*, as quickly as possible. Draw the tongue forward, clear the mouth, dash cold water upon the face and chest, rub the body vigorously, and apply artificial respiration. If



chlorine has been accidentally breathed, inhale, as quickly as possible, ammonia gas.

Choking.—When a particle of food, or any other body, becomes lodged in the throat, go upon all fours, and cough. If it is not expelled, the patient should be seized by the heels and suspended head downward, while his back is percussed by another person. If the body can be seen by drawing the tongue well forward, seize it with a pair of forceps, or a hook made by bending the end of a wire or a hair-pin which has been straightened. Sometimes it may be elevated from its position by means of a spoon handle. If it is out of sight, and all efforts to expel it are unavailing, press it down with the finger or a smooth rod with a rounded end, throwing the head back as far as possible while doing so. A body which has lodged part way down the esophagus, may sometimes be pressed down into the stomach by pressing hard upon each side of the neck close to the windpipe.

Lightning Stroke.—Dr. Fothergill remarks as follows on this subject :—

“Persons struck by lightning are not always dead when they appear to be so. There are few recoveries from this state, because no means are tried to restore the sufferer. In the tropics there are many instances in which persons struck down by lightning have recovered after a heavy thunder shower; and it would appear that cold

affusion to the body has a decided action in such cases. The injured cannot be harmed by the free use of cold water ; and if only an occasional recovery took place, it would be well worth the pains bestowed. The persons so injured should have cold water poured or even dashed freely over them."

Artificial respiration should also be employed.

Sun-Stroke.—Carry the patient at once to a cool, shady place ; remove his clothing, and dash cold water upon his body, especially the head and chest. Rubbing the spine with ice is an excellent remedy. Continue the cold application until the unnatural heat is materially decreased. Artificial respiration should be practiced at the same time. No stimulants should be given.

Hemorrhage.—If an artery is wounded, the blood will flow in jets, sometimes being thrown several feet, and will be of a bright red color ; if the wounded vessel is a vein, the blood will be of a dark color, and will flow in a steady stream. Slight hemorrhage will be easily controlled by pressure over a little pad of folded linen applied directly to the wound.

When large vessels are injured, greater care is necessary. If the vessel be an artery, apply the pressure between the wound and the heart ; if it be a vein, apply the pressure upon the opposite side.



The application of cold, by means of cloths wet in iced water, snow, or pounded ice, is a very effective means of stopping hemorrhage.

In case the hand, forearm, or foot is severely wounded, it should be elevated above the rest of the body, and bound in towels with which pounded ice is folded. Hemorrhage from the end of the finger or toe may be stopped by the application of pressure to the sides.

When a very large artery of the arm or leg is wounded, resulting in hemorrhage which cannot be quickly controlled by any of the means mentioned, proceed as follows : —

Take a handkerchief or strip of cloth of sufficient length to reach round the limb, and tie a large knot in the center. Apply the knot just over the course of the wounded vessel, above the wound. Now pass a stout ruler or rod beneath the bandage, upon the side opposite the knot. Twist it round so as to tighten the bandage, and thus compress the artery beneath the knot. Increase the compression until the hemorrhage is controlled. A tight bandage of this kind should not be retained too long, as it may destroy the life of the parts below. The object is to control the hemorrhage only until the wounded vessel can be secured and tied by a surgeon or other competent person.

Bleeding from wounds of the scalp is easily controlled by pressure upon the seat of injury.

Nosebleed.—Remove all constrictions from the throat, so that the return of blood from the head will be unobstructed. Hold the head erect for the same reason ; inclining it forward increases the hemorrhage. Twist the corner of a handkerchief or piece of old linen, and press tightly into the bleeding nostril. Hold it in place until the bleeding ceases, unless it passes backward into the throat, when other measures will be required. Blowing the nose, and bathing it in water, increases rather than checks the hemorrhage.

Pressure upon the facial artery upon the side on which the hemorrhage occurs, will sometimes check it. Apply firm pressure upon the notch on the lower border of the lower jaw just in front of the angle.

When the bleeding has once stopped, do not disturb the clot that has formed in the nose, as bleeding may be induced again by so doing. In very severe cases, the posterior opening from the nasal cavity into the mouth will require plugging ; surgical assistance will be necessary for this.

Hemorrhage from the nose is seldom fatal. When scattered upon the floor or clothing, a few ounces of blood look like a quart. A very few spoonfuls will color a large quantity of water very red.

Bleeding from Lungs.—Blood which is expectorated by coughing, often comes from the

throat or nasal cavity ; having trickled down into the air passages, it is coughed out. This is nearly always of a dark color, and is commonly clotted. Blood which comes from the lungs is of a bright red color, and is frothy from the admixture of air. The amount of blood lost is much less than is usually thought, and is seldom the cause of death.

Keep the patient as quiet as possible, with his head elevated a little. Instruct him to restrain his cough as much as he can, and to avoid all violent efforts at coughing. Make cold applications to the chest, and hot to the spine, feet, and limbs. For applying cold to the chest, rubber ice-bags are very convenient, as they do not wet the clothing. When they are not at hand, employ compresses of snow or pounded ice large enough to cover the entire chest, or the affected side if the exact origin of the hemorrhage is known. Salt taken into the mouth, and the inhalation of vapor of turpentine, are also very useful measures. Pour a little turpentine into a cup of boiling water, and place to the patient's nose.

Cuts.—Cuts should be dressed in such a way that the severed edges may unite properly. Firm clots of blood lying in the wound, should be carefully removed, with any other foreign body. If the bleeding has ceased, the edges may be brought together and secured by stitches or adhesive straps, according to the size and position of the wound. Small wounds sometimes require only that the

edges be thus brought together to stop the bleeding. The strips of plaster used should be narrow, and there should be narrow spaces left between them, to allow room for the escape of the discharge, should any occur.

Care should be taken not to close a wound when vessels of any size have been ruptured, without either ligating the bleeding vessel or closing it by torsion. Much injury has often resulted from a neglect of this rule.

If the end of a finger or toe has been accidentally cut off, it should be at once replaced, even though it may have been entirely severed. Being kept in place, it will be quite likely to adhere and prevent an ugly scar. If the severed piece is frozen or badly bruised, the attempt will be useless.

Dressing for Wounds.—As a dressing to be applied to all wounds, nothing is equal to water. While swollen and painful, cold applications should be made by means of thin compresses, which should be changed every few minutes. After the pain and inflammation have subsided, apply thin compresses kept constantly wet in tepid water. In some cases submersion of the part in water is serviceable.

The various "pain-killers," liniments, and washes, have no healing virtue whatever. Opium and arnica relieve the pain only by paralyzing the nerves. They simply hide the condition of



the wound from the patient. Both are poisons which retard healing.

Bruises.—Apply as quickly as possible a hot fomentation. Renew the application every five minutes for an hour or two. Apply afterward the tepid compress. This will prevent soreness, and much of the swelling and discoloration which would otherwise result. This is the way to treat a black eye, a broken nose, or a foot which has been pierced by a rusty nail.

How to Cure a Sprain.—A sprain is an injury to a joint, produced by straining or lacerating one or more of the ligaments connected with it. The first thing to be done after the receipt of the injury is to apply hot fomentations to the injured joint; and the sooner the better. After applying hot fomentations for one or two hours, or longer, if the pain continues, apply cold compresses, and keep the joint entirely at rest. When there is much swelling, alternating it with cold pouring, continued for an hour at a time, will often give great relief. Rest is one of the most essential features of treatment, since the injured ligaments cannot be repaired while disturbed by the motion of the joint. Cases are numerous in which an injury that was at first a slight sprain, has resulted in the total loss of the use of the limb, from neglect to give the joint the required rest while nature was effecting a repair. The various liniments which have a

reputation for the cure of sprains are useful **only as** a means of inducing the patient to rub and manipulate the joint. Rubbing is a very useful means of treatment, especially if the limb is considerably swollen. Violent manipulation of the joint should be carefully avoided, as it would **only** serve to increase inflammation.

Fractures and Dislocations.—These accidents usually require the attention of a skillful surgeon, who should be called at once.

RAPID AND SIMPLE METHOD OF REDUCING DISLOCATION OF THE SHOULDER.—A foreign physician has suggested a simple method of reducing this common form of dislocation. He “makes the patient stand with a crutch in his axilla ; he then holds the hand of the affected side, making slight traction downward ; the patient is now to let himself down as if he was going to fall on his knees, and as he falls, the head of the humerus glides into its normal position, and the patient is surprised at finding himself cured.”

For Scalds.—Apply at once light cloths dipped in cool or tepid water, or immerse the part in water. When the pain is somewhat relieved, apply pure lard or sweet oil. One of the best preparations is sweet oil to which carbolic acid has been added in proportion of one part to twenty. It may be applied by means of a saturated cotton or linen cloth laid over the part. If the scald has not destroyed much of the skin,



prompt relief will usually be obtained by covering the part with the white of egg applied with a soft brush. Apply a second coat when the first dries. Deep scalds should be poulticed after the pain has been somewhat relieved by the application of cool wet cloths, as they will be attended with sloughing, and discharge of pus. Alum-water and carron oil (a mixture of lime water and linseed oil, in equal parts) are favorite remedies with some. A saturated solution of bicarbonate of soda, applied by means of a thin compress, is recommended as a most excellent remedy.

FOR A BURN.—If a person has been burned by the clothes' catching fire, remove the clothing as soon as possible, taking care to keep the burned surface drenched with tepid water; and be sure not to drag upon the injured skin in such a way as to pull it off, as it is the best possible protection for the tender flesh beneath. When the clothing has been removed, keep the burned surface covered with cloths wrung out of soda-water made by dissolving a teaspoonful of soda in a pint of water. This is an effectual method of treating burns, and is far superior to the old-time dressing of carron oil.

To burns produced by lye, caustic potash, or other alkalies, apply vinegar or some other weak acid as quickly as possible. To a burn produced

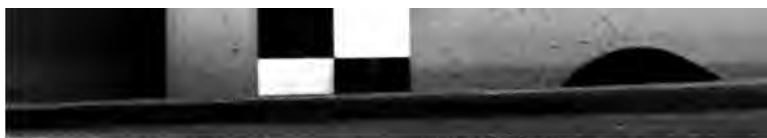
by an acid, apply an alkali, as soda, ashes, or simple earth.

TO PREVENT SCARS AFTER BURNS.—It very often happens that great disfigurement is occasioned by the contraction of the scars produced by deep burns. To a great degree this may be prevented by daily manipulation of the parts with oil. The scar should be well rubbed, stretched and pulled, and by this treatment it may be kept soft and flexible.

Freezing.—In cases of freezing, the great danger is in thawing out too quickly, the result of which is inflammation and death of the frosted parts; or in milder cases, chilblain. Keep the patient away from the fire. Place him in a cool room, and rub the frozen parts with snow or cold wet cloths until the circulation is reestablished. If the patient is apparently dead, artificial respiration should be practiced as long as there is a particle of hope of recovery; and the effort should not be abandoned for several hours.

Those who are exposed to severe cold should remember that one of the symptoms of freezing is an almost uncontrollable desire to sleep. Resist it.

Incubation Period of Hydrophobia.—The incubation period of hydrophobia is probably more variable than that of any other disease. Little accurate information existed respecting this malady, previous to the researches of Pas-



teur within the last few years. This investigator collected over five hundred cases of the disease, which had occurred in France, and found the average period of incubation to be a little less than three months. In some instances, the period was three or four weeks. It may be said that the period varies from one month to three or four months. The popular opinion that a person may die from the bite of a mad dog years after the wound is healed, is erroneous. Quite a number of diseases, such as tetanus and acute softening of the brain, are very similar to the disease commonly called hydrophobia, and are doubtless often mistaken for it.

What to Do for Rattlesnake Bites.—Dr. S. Weir Mitchell, of Philadelphia, who has made very extensive researches concerning the nature and effects of the rattlesnake virus, describes, in a recently published article, the proper method of dealing with rattlesnake bites, as follows: “I am often asked what I would do if bitten while far from help. If the wound be at the tip of a finger, I should like to get rid of the part by some such auto-surgical means as a knife or a possible hot iron affords. Failing these, or while seeking help, it is wise to quarantine the poison by two ligatures drawn tight enough to stop all circulation. The heart weakness is made worse by emotion, and at this time a man may need stimulus to enable him to walk

home. As soon as possible some one should thoroughly infiltrate the seat of the bite with permanganate of soda or potash, or some other like agent. By working and kneading the tissues, the venom and the antidote may be made to come into contact, and the former may be so far destroyed. At this time it becomes needful to relax the ligatures to escape gangrene. The relaxation, of course, lets some venom into the blood-round, but in a few moments it is possible again to tighten the ligatures, and again to inject the local antidote. If the dose of venom be large, and the distance from help great, except the knife or cautery little is to be done that is of value. But it is well to bear in mind that in this country a bite in the extremities rarely causes death. I have known of nine dogs having been bitten by as many snakes, and of these dogs but two died. In India there would have been probably nine dead dogs."

Insect Stings.—The pain caused by the sting of an insect is the result of an acid poison injected into the tissues. The first thing to be done is to press the tube of a small key firmly on the wound, moving the key from side to side to favor the expulsion of the sting with its accompanying poison. The sting, if left in the wound by the insect, should be carefully extracted, as it will greatly increase the local irritation. The poison of the virus being acid,

common sense points to the alkalies as the proper antidote. Among the most easily procured remedies may be mentioned soft soap, liquor of ammonia (spirits of hartshorn), smelling salts, washing soda, quicklime made into a paste with water, lime water, the juice of an onion, bruised dock leaves, tomato juice, wood-ashes, and carbonate of soda. A solution of borax in the proportion of one ounce to a pint of water is also a most excellent remedy.

The same remedies should be applied to the bites of gnats, mosquitoes, spiders, fleas, and other insects.

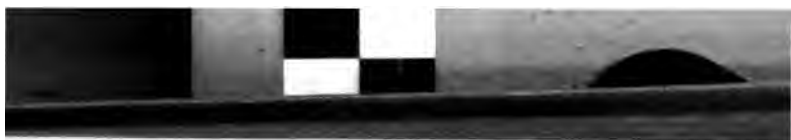
Dirt in the Eye.—Particles of dirt or other foreign bodies in the eye should be removed at once. If the object is upon the visible portion of the eyeball, remove it with the corner of a handkerchief. If concealed beneath the lid, roll the lid over upon a pencil, or turn it outward with the finger, and remove the speck in the same way. Dirt beneath the upper eyelid can often be removed by drawing the lid outward and downward over the under lid. Then press it upon the under lid and open the eye. Blowing the nose while the eye is closed will assist in the removal of small particles of dirt. Particles of iron which have become inbedded in the tissue of the eye, may be loosened and removed by a needle mounted in the end of a

pencil; but such an instrument must be used with extreme care.

Lime in the Eye.—Lime is a powerfully caustic alkali, and in numerous instances a small quantity thrown into the eye has resulted in total destruction of sight. A strong solution of sugar or diluted vinegar should be applied as quickly as possible after the accident, in case a particle has been thrown into the eye. While the lotion is in preparation, the eye should be thoroughly washed.

Foreign Bodies in the Ear.—Never use a sharp instrument about the ear in any way. Insects can generally be dislodged very speedily by dropping into the ear a little oil or warm water. Solid bodies, like peas, beans, or pieces of stone, can usually be removed by the diligent application of warm water and soap by means of a syringe. The head should be inclined to one side, so that the object may readily drop out. If this is unsuccessful, after thorough trial, use a loop of fine wire or horsehair, a small scoop, or a pair of delicate forceps. Hardened ear-wax should be softened by warm water and soap, and then removed with great care by means of the scoop.

Foreign Bodies in the Nose.—Blow through the nose with as much force as possible, at the same time closing the mouth and the unobstructed nostril. Sneezing will sometimes



expel the cause of obstruction. A loop of wire or a blunt hook may be successfully used ; but care must be taken to avoid crowding the object farther in. If it is not tightly imbedded, it may be driven out by making the water from a syringe pass up the unobstructed nostril and out of the one containing the foreign body.

Another plan is to blow the patient's nose for him by closing the empty nostril with the finger, and then blowing suddenly and strongly into the mouth. The glottis closes spasmodically, and the whole force of the breath goes to expel the button or bean, which commonly flies out at the first effort. This plan has the great advantage of exciting no terror in children, and of being capable of being at once employed, before delay has given rise to swelling and impaction.

A New Means of Expelling Foreign Bodies Which have been Swallowed.—Prof. Bilioth, of Vienna, a great Austrian surgeon, employs at his clinic the following simple means of expelling foreign bodies which have passed into the stomach. The patient is simply made to eat a large quantity of potatoes. These have a tendency to produce a gaseous distention of the bowels, and fill the intestines with a pulpy mass, which entangles and sweeps away the foreign body, whatever it may be.

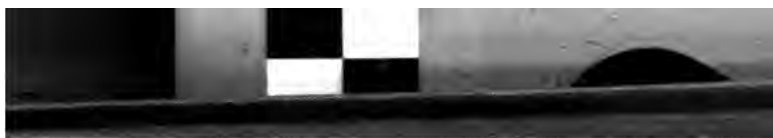
Some time ago, a hospital physician, after laboring indefatigably to extract a marble from a child's

throat, rushed to his office after more instruments. After he was gone, a police officer who witnessed the doctor's unsuccessful efforts, turned the child upside down, shook it by its heels, and out dropped the marble.

Chimney on Fire.—Throw into the stove, or upon the coals in the fire-place, a handful of salt or sulphur. Close the stove-draft, or hold a board or blanket before the fire-place.

What to Do in Poisoning.—Give an emetic at once, which may consist simply of tepid water in large quantities, or the same with the addition of mustard or common salt. After drinking several cupfuls, tickle the throat with the finger or a feather. Continue taking a cupful every two or three minutes until vomiting occurs. Individual poisons require special remedies. The following list comprises the most common poisons and their antidotes :—

VEGETABLE POISONS.—Opium, morphia, camphor, aconite, laudanum, paregoric, strychnia, tobacco, lobelia, arnica, and other vegetable poisons, require the emetic and the application of a stomach-pump if possible. Milk and mucilaginous drinks should be given freely after thorough vomiting. Artificial respiration should be employed in poisoning by strychnia and opium. The cold douche is also excellent in cases of poisoning by the latter drug. Keep the patient awake, if possible, by making him walk about.



ACIDS.—Sulphuric (oil of vitriol), nitric (aqua fortis), hydrochloric (muriatic), and oxalic acids are the more common. Drink largely of water at once. Acids are neutralized by alkalies. Cal-cined magnesia is the best antidote. Chalk (powdered), whiting, lime, weak lye, and strong soapsuds are the best substitutes. Something must be done quickly in case of poisoning by acids.

MINERAL POISONS.—For corrosive sublimate, white precipitate, red precipitate, and vermil-ion, take the whites of several eggs in a quart of tepid water. Soapsuds thickened a little with wheat flour is the best substitute for eggs. No other emetic is necessary.

Arsenic, cobalt (fly powder), ratsbane, Paris green, and other compounds containing arsenic, should be expelled by vomiting as soon as possi-ble. Then administer quite large doses of cal-cined magnesia.

Acetate of lead, white lead, litharge, and salt-peter require an emetic followed by oil or mucilage.

For lunar caustic (nitrate of silver), adminis-ter half a tablespoonful of salt in a pint of water.

The antidote for matches or phosphorus is cal-cined magnesia, followed by soothing fluids.

Antidotes for verdigris and blue vitriol (sul-phate of copper) are eggs, milk, and soda.

ALKALIES. — The most common which are sources of poisoning are ammonia, potash, soda, pearlash, lye (from wood ashes), and salts of tartar. Drink copiously of weak vinegar or lemon juice. Afterward take some mucilaginous drink, or oil.

ALCOHOLIC POISONING. — A man found "dead drunk" should be treated like any other case of narcotic poisoning, as from opium.

CHRONIC POISONING by lead, opium, tobacco, or any other drug which has been received into the system for a long time, requires, first, that the cause be wholly removed at once; secondly, attention to the general health. In the case of opium and tobacco, a discontinuance of their use is attended with a great deal of unpleasant feeling on the part of the patient. He feels as though he would certainly die. His fears are groundless; he is in much less danger of dying than before.

POISONOUS CANDIES AND FOODS. — The paints used in the manufacture of candies are poisonous, and often sicken those who eat them, sometimes fatally in the case of children.

Fish and meat, either fresh or canned, are frequently sources of poisoning. Decayed fruit or other food, shellfish, and mushrooms are often productive of injury in the same way. Such cases should be treated on the general principles relating to poisoning.



SODA WATER. — The water very often contains lead. The sirups are most wretched imitations of natural flavors, and are made from such things as old cheese, tar, and mineral acids.

Dangerous Kerosene.—The kerosene oil sold or used in the majority of our cities is almost as dangerous a commodity as gunpowder or nitroglycerine. Millions of dollars' worth of property has been destroyed, and hundreds of lives have been sacrificed, by the use of cheap illuminating oil. Crude kerosene contains benzine, naphtha, and other highly volatile and explosive compounds. These dangerous agents should be wholly removed by the refiner in preparing the oil for use ; but the manufacturer finds it to his pecuniary advantage to allow them to remain in the oil in greater or less proportions. This kind of oil will burn at a much lower temperature than that which is pure, and it is to this fact that its dangerous properties are due, since it is thereby rendered explosive when used in the ordinary kerosene lamp.

It is very important to be able to distinguish dangerous oil from that which may be used without danger. The following is an excellent method for testing oil :—

Place upon the stove a pan or tin pail containing water. Float in this vessel a deep saucer or small, deep cup containing a portion of the oil to be tested. Place in the oil a thermometer, and

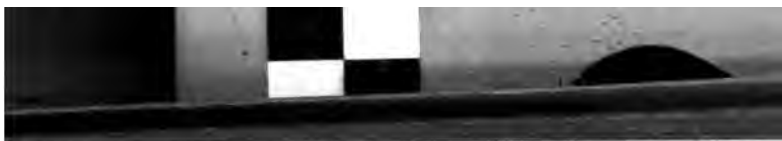
observe the natural increase of temperature. When the temperature reaches 70° or 80°, bring a burning match or taper near to the surface of the oil. If a flash is produced, the article is highly dangerous. Continue the observations as the temperature rises, and if a flash is observed at a temperature less than 140°, the oil is utterly unfit for use, and should not be employed for illuminating purposes.

The lower the temperature at which the flash occurs, the greater the danger.

The State Legislature of Michigan has passed an act prohibiting the use or sale of kerosene oil which will flash below 140°.

Dangers in Gasoline.—We quote the following, respecting this widely-used product of coal oil, from a paper published for general distribution by the State Board of Health :—

“Gasoline, since its discovery, has always been known to chemists to be a dangerous substance. It evaporates rapidly at ordinary temperatures, and its vapor, when mixed with ordinary air in proper proportion, forms an explosive compound the same as does ordinary illuminating gas. It is stated that one pint of gasoline, when evaporated, will render explosive two hundred cubic feet of air. The vapor of gasoline is in some respects more dangerous than common illuminating gas, especially the variety of gasoline which is ordinarily used in



connection with gasoline stoves. Certainly no one would think of placing gunpowder or nitroglycerine in the hands of ignorant or unskilled persons, even though precise instructions respecting their use might accompany the destructive articles; yet this is precisely what is done in the most extensive manner with gasoline, an explosive in all respects more dangerous than gunpowder. Gunpowder will not explode unless fire is brought in immediate contact with it. It certainly will not leave the can containing it, should the cover happen to be left off, and insidiously find its way to a fire, a lighted lamp, or other means by which an explosion may be produced. But this may occur with gasoline.

“RULES FOR THE USE AND CARE OF GASOLINE.

— Every person employing or keeping gasoline, should bear constantly in mind the following facts and precautions respecting its use: —

“1. Gasoline is an extremely dangerous explosive substance.

“2. It should be kept in a cool, well-ventilated place, if possible outdoors or in an outbuilding, never in a kitchen, closet, or cellar.

“3. A vessel containing gasoline, unless tightly closed, should never be brought within ten feet of a lamp, stove, grate, flame, or fire of any sort. The small flame of a match or even a spark is sufficient to explode the gas when present in sufficient quantity.

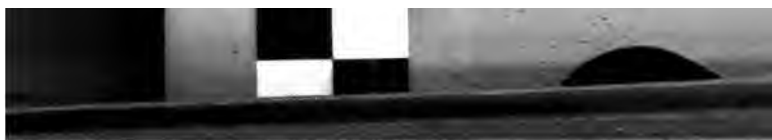
“4. The vapor of gasoline may be carried by a draft or current of air, and thus be brought in contact with fire at a considerable distance, even greater than that mentioned in the preceding paragraph ; consequently gasoline should never be opened or poured from one vessel to another in a current of air, unless the current is *from* the room outdoors.

“5. The danger in connection with the use of gasoline stoves is not so much in the stoves themselves as in having the gasoline about ; yet by continued use, the valves of a stove may become so worn that leaks may occur, and thus a stove may become a source of great danger.

“6. If an overflow of gas occurs, from being turned on too freely, from leakage of valves, or from the blowing out of the generating burner, as sometimes accidentally happens, the surplus gasoline should be carefully wiped up, and the room should be well aired by the opening up of windows and doors before the burner is lighted.

“7. If an open vessel containing gasoline has been standing in a room over night, or an overflow has occurred during the night, or if there is found in a room a strong smell of gasoline at any time, the room should be opened and well aired, and that before a match is lighted or a lighted lamp or candle carried into the room.

“8. Gasoline should never be used for lighting



a fire. An explosion, which may possibly be fatal in its effects, is almost certain to follow. Persons have been maimed for life in this way.

"9. The use of gasoline lamps is, if possible, attended with even greater dangers than the use of gasoline stoves.

"10. A wise regard for safety will lead to the disuse of gasoline in any form, for domestic purposes.

"11. Gas or kerosene stoves may be safely substituted for gasoline stoves, but no gas, gasoline, or kerosene stoves are so safe or healthful as the ordinary wood or coal stove. The ordinary stove aids in the ventilation of the room, and carries away the poisonous gases formed by the combustion of the fuel, whereas the other forms of stoves discharge the products of combustion into the air of the room, compelling the occupants to breathe the poisonous gases. Gas, gasoline, and kerosene stoves should never be employed in other than very open or well-ventilated rooms, unless provided with a special flue or ventilating duct for the purpose of carrying off the products of combustion."



panacea. These conscienceless fellows manufacture testimonials by the thousand, taking care to use the names of persons who have "moved away," or who have died by some accident since the testimonial was given. In many instances, persons are hired to give testimonials and answer letters of inquiry in such a way as to encourage business. But, in by far the majority of cases, the manufacturer of patent medicines does not think it worth while to take the trouble to get genuine signers to his testimonials. The lies told in the recommendations are of such minor importance compared with the enormous mendacity which appears in every line of the claims made in the wrappers which surround each bottle of medicine, or the labels which cover it, and in the newspaper announcements, that it would be hardly worth while to stop at so trifling a matter as the forgery of a dead person's name, or the signing of a testimonial with the name of a person who never lived. The shameless dishonesty and ingenious villainy exhibited by the manufacturers and venders of patent medicines, are beyond description, as we feel sure our readers will become convinced by a perusal of the facts which we propose to present to them. We shall undertake truthfully and fearlessly to expose the enormous frauds which are practiced upon the unsuspecting public.

As the best means of exposing the shameless

character of the traffic in patent medicines and secret remedies, we propose to publish the results of the analyses of several hundred of the most popular and widely known of these nostrums, as reported by competent chemical authorities. Some of the analyses which we shall give have been made at our own instigation, and others have been collected from a variety of reliable sources. In many instances, the analysis will show the most highly extolled remedy to be absolutely inert. In other cases it will appear that nostrums which are represented to cure certain maladies, are in the highest degree calculated to produce the very diseases for which they are offered as remedies. In not a few instances, secret nostrums will actually prove to be most dangerous poisons, and few will be recognized as really valuable; but even these latter are sold at a price so out of proportion to the first cost that their sale cannot be regarded otherwise than as a patent fraud upon the public. Without further introduction, we present herewith our collection, the result of many years' painstaking research, and the collection of analyses of patent nostrums and proprietary medicines.

In looking over the analyses which we herewith offer, and which, we believe, is the largest ever published, the reader will notice that those remedies which are really valuable are by no means novel or peculiar, but are old, well-tried

remedies, which the quack has rendered fascinating by offering under some new-fangled and alluring name.

SURE CURES FOR EPILEPSY.

One of the most widely advertised of these is "Samaritan Nervine." This remedy is warranted to cure not only fits, but bad temper, insanity, waywardness, a quarrelsome disposition, and many other moral as well as physical maladies. Here is the formula, according to an analysis published by *New Idea* :—

Potass. bromide 1 oz., sugar 1 oz., caramel 20 drops, water 5 oz.; dissolve, and add oil cassia 10 drops.

Pleis's Fit Powders.—According to *The Drug Mill*, these powders are composed of the following : Bromide of potash 15 gr., powdered gentian 5 gr.

Peacock's Bromides.—This preparation consists of lithium bromide 1 gr., calcium bromide 3 gr., ammonium bromide 6 gr., sodium bromide 10 gr., potassium bromide 10 gr., vanilla $\frac{1}{3}$ oz., sugar 10 oz., water 16 oz.

Eleplzone.—According to *New Idea*, this marvelous remedy which the manufacturers claim to have prepared for the purpose "of rescuing the unwary and unfortunate from the unprincipled hands of quacks, charlatans, empirics, and venders of poisonous patent medicines, which ruin thousands annually, and which make it a duty of some educated person to check their wholesale slaughter," is sold at the modest price of \$4.00 a pint. Here is the formula : Magnesii bromidi 3 dr., sodii bromidi 3 dr., aquæ $1\frac{1}{2}$ oz., ol. cassiæ 2 drops, syr. simplex sufficient to make 4 oz., carmine to color.

The cost of a pint of the above could not exceed fifteen cents. It will be noticed that the

bromides of potash and other alkalies form the basis of all these nostrums recommended for epilepsy. This remedy is in common use by all physicians, and often relieves the symptoms of the disease, although it seldom effects a cure. Elepizone is in no respect superior to other nostrums of this class.

OPIUM CURES.

A great number of so-called "opium cures" are advertized in the newspapers and popular magazines. We have taken pains to obtain and examine a considerable number of these nostrums, and have rarely failed to find that the so-called remedy for the opium habit was simply opium in disguise. One of the most contemptible of these fraudulent cures is a mixture manufactured by a Mrs. Harriet Hubbard Ayer.

Ayer's Vita Nuova.—(*New Life*.) This medicine is thus described by the manufacturer: "A life-giving and health-renewing cordial and tonic. A positive cure for the opium and alcohol habits. Dose: three tablespoonfuls three times a day. In addition to this, it can be taken as necessity requires, after any unusual labor, mental or physical. Price, \$1.00 a bottle. It creates no craving, and can be left off at any moment without the slightest desire for it."

This nostrum is guaranteed to be positively free from alcohol and narcotics. According to the analysis published in the *Druggists' Circular*, it contains nearly 20 per cent of alcohol, and large quantities of cocaine, one of the most powerful and deadly narcotics known. The manufacturers of this nostrum have deliberately set themselves about fastening the cocaine



habit upon hundreds of thousands of persons. A more diabolical scheme could scarcely be conceived. Nevertheless, here follows another even worse.

Scotch Oats Essence.—This so-called "nerve tonic," which is guaranteed to contain no alcohol, and to be free from harmful ingredients, actually contains 35 per cent of alcohol and two grains of morphia to each bottle. The *Western Druggist* very properly characterizes this nostrum as a "diabolical concoction, a crime which is not merely obtaining money under false pretenses, nor simply a case of ingenious and wholesale robbery, but a devilish scheme for undermining the mind, soul, and life of its victims, and this under the pious pretense of strengthening the body and restoring the jaded mind."

Haines's Golden Specific for the Opium Habit.—The *Western Druggist* gives the following as the formula of "Haines's Golden Specific for the Opium Habit":—

Bayberry-root bark powdered 16 oz., ginger powdered 8 oz., capsicum powdered 1 oz.

There is evidently nothing in this mixture which could exercise any potency in the cure of the opium habit. It is a fraud of the first water.

Double Chloride of Gold.—Some years ago we obtained a sample of this remedy, and made a careful search for the presence of gold, but found none. It has been widely recommended and sold, as a remedy for drunkenness and the opium habit. On the authority of the *Druggists' Circular*, we give the following as its true composition: Chloride of ammonium 1 gr., aloin 2 gr., compound tinct. of cinchona 3 fl. oz., water sufficient to make 4 fl. oz.

COSMETICS.

The anxiety of the devotees of fashion to add to their natural complexion charms which nature has denied them, has given rise to an enormous business in the manufacture of cosmetics, the

most of which are not only useless and harmful, but positively dangerous. Quite a proportion of the popular remedies of this class contain corrosive sublimate. The following are a few samples:—

Malvina Cream.—"Warranted to remove freckles, beautify the complexion, and preserve the smoothness of the skin." It is composed of the following substances: Saxoline 265 gr., white wax 50 gr., spermaceti 30 gr., bismuth oxychloride 40 gr., mercuric chloride $\frac{1}{2}$ gr., spirits of rose (4 drams of oil to 1 pint) 20 drops, oil of bitter almonds 1-10 drops.

Malvina Lotion.—To be used with "Malvina Cream." "Warranted to cure freckles, pimples, moth patches, liver mole, ringworm, and cleanses and softens the skin to youthful freshness." According to *New Idea* this lotion contains corrosive sublimate, one of the deadliest of poisons.

Palmer's Cosmetic.—A weak solution of sulpho-carbolate of zinc in glycerine and rose-water.

Lac Virginis.—This remedy consists of tinct. of benzoin 10 parts, rose-water 150 parts. In use, a teaspoonful is to be added to a basin of water. Really a valuable remedy, but not worth the price charged for it.

Helmbold's Jelly of Glycerine and Roses.—Tragacanth 1 dr., triple ext. of rose 6 drops, glycerine 2 fl. oz., water 4 fl. oz.

Hagan's Magnolia Balm.—The following mixture is said to represent this popular nostrum: Pure oxide of zinc 1 oz., rose-water 4 oz., glycerine 1 dr., perfume 25 drops.

Funk's Cream of Roses.—One dram of gum tragacanth dissolved in eight ounces of warm water; strain through muslin while hot, and add one ounce each of glycerine and triple extract of white roses.

Falke's Sulpholine Cream.—This is composed of mucilage of quince seeds 300 parts, glycerine 40 parts, sulpho-carbolate of sodium 20 parts.

Comedone Lotion—consists of sulphuric ether 1 oz., carbonate ammonia 1 dr., boracic acid 20 gr., water to make 16 dr.

Tully Powder.—Sulphate morphia, pulverized camphor, pulverized licorice root, prepared chalk.

Albadermine.—This name is applied to a method for removing tan and freckles in which two solutions are used.

First, potass. iodide 2 dr., pure iodine 3 gr., glycerine 3 dr., rose-water 4 oz.

Second, hyposulphide of soda 1 1-2 oz., rose-water 1 pt.

In use, solution No. 1 is applied to the skin with a camel's-hair pencil. After fifteen or twenty minutes, a piece of lint moistened with solution No. 2 is laid upon the part previously treated by solution No. 1. The lint is removed after a few minutes, squeezed, and again moistened with solution No. 2, and applied until the iodine stain has disappeared. The freckles or tan will be removed, or greatly diminished.

The above remedy is doubtless a useful one, but the following so-called Recamier remedies are among the most dangerous and worthless with which we are acquainted. These remedies are claimed to have been obtained by Mrs. Ayer from a French countess, a relative of the celebrated Mme. Recamier. The character of their ingredients will be readily recognized by reading the analysis. The only things remarkable about these preparations are their name and the brazen effrontery with which they are offered as *novel* and *secret* preparations.

Recamier Balm.—A solution of corrosive sublimate with a little oxide of zinc. Costs about ten cents ; sold at \$1.50.

Recamier Lotion.—According to the *Western Druggist*, the following is the formula : Oxide of zinc 2 oz., glycerine 6½ dr., water 1 dr., spirits of rose 1 dr.

Modine.—This is a fair sample of the numerous depilatories which are offered for sale. It consists of mono-sulphide of calcium. This caustic paste dissolves the hair close to the skin, possibly penetrating slightly into the hair follicles. It does not remove the hair permanently, as it does not destroy the roots. The same remark applies to all remedies of this kind.

According to Dr. Tuttle in the *Medical Record*, lead is not the most harmful constituent of these preparations. The following list shows at a glance the principal ingredients of the most popular enamels, lotions, and powders used as cosmetics :—

ENAMELS.

Eugenie's Favorite,	Carbonate lead.
Hagan's Magnolia Balm,	Oxide zinc.
French's Grease Paint,	Oxide zinc and calcium.
Snow White Oriental Cream,	Carbonate lead.
Snow White Enamel,	Carbonate lead.
Gouraud's Oriental Cream,	Calomel and water.
Laird's Bloom of Youth,	Oxide zinc and calcium.
Bradford's Enameline,	Oxide zinc.

LOTIONS.

Kalydor,	Corrosive sublimate and potash.
Circassian Cream,	Corrosive sublimate.
Milk of Roses,	Corrosive sublimate, rose-water, and oil of almonds.

POWDERS.

Complexion Powder,	Bismuth subcarbon.
Flake White,	Carbonate lead.

Riker's Face Powder,

Calcium and zinc car-
bonate.Saunders's Face Powder,
Pearl White,Oxide of zinc.
Subnitrate bismuth.

ASTHMA, COUGH, AND CON- SUMPTION CURES.

As the reader will observe in reading the following analyses, the popular nostrums for lung disorders, almost without exception, contain some preparation of opium or other narcotic. Many contain alcohol in addition, and such other dangerous drugs as *lobelia* and *tartar emetic*. It is too little to say that not one of these so-called "cures" ever cured a single case of consumption. Doubtless most, if not all, of them have hurried many a poor deluded consumptive into his grave. The public cannot be too earnestly warned against the use of these delusive compounds.

Wistar's Balsam of Wild Cherry.—Fl. ext. wild cherry 1 fl. oz., fl. ext. ipecac 2 fl. dr., fl. ext. squills 2 fl. dr., tinct. opium 1 dr., tartar emetic 2 gr., sugar-house sirup 3 fl. oz., alcohol 6 fl. dr., sp. anise (1 in 8) 20 m., tinct. cudbear comp., N. F., 2 dr., water sufficient to make 8 fl. oz.

White's Cough Sirup.—According to *New Idea*, the following is substantially the same as the proprietary article: sirup tolutani 2 oz., glycerini 4 oz., sirup scillæ comp. 6 oz., sirup ipecacuanhæ 6 oz., tinct. lobelia 6 oz., tinct. opii camph. 6 oz., ext. pilocarpus fl. 2 oz., ammonii chloridi 1 oz.

Thorn's Cough Mixture.—Hive sirup 2 fl. oz., paregoric 1 fl. oz., sweet spts. nitre 1 fl. oz.

Piso's Consumption Cure.—Tinct. tolu $\frac{1}{2}$ oz., fl. ext. lobelia 2 dr., fl. ext. cannabis indica 2 dr., chloroform 1 dr., sulph. morphia 4 gr., tartar emetic 4 gr., ess. mentha viridis 10 drops, water 8 oz., sugar 14 oz.

Brown's Bronchial Troches.—The following is said to be identical with the original article sold under the above name: Powdered ext. licorice 1 lb., powdered sugar $1\frac{1}{2}$ lb., powdered cubebs $\frac{1}{4}$ lb., powdered gum arabic $\frac{1}{4}$ lb., ext. conium 1 oz.

Stoke's Expectorant.—Carbonate ammonia 30 gr., fl. ext. squills 1 fl. dr., fl. ext. senega 1 fl. dr., paregoric 6 fl. dr., sirup of tolu 12 fl. dr., water 10 fl. dr.

Smith Bros.' Cough Drops.—These drops are composed of sugar, powdered charcoal, a small amount of licorice, oil of sassafras, and oil of anise.

Consumption Cure.—Sirup tolu, sirup wild cherry, tinct. hyoscyamus sirup squills. chloric ether, water.

Shilleh's Consumption Cure.—Muriate of morphine 3 gr., muriatic acid 3 minims, fl. ext. of henbane 2 fl. dr., fl. ext. of ginger 3 fl. dr., fl. ext. of wild cherry 3 fl. dr., diluted alcohol 3 fl. dr., chloroform 1 fl. dr., essence peppermint 30 minims, sirup of tar 3 fl. oz., simple sirup enough to make 8 fl. oz.

Schenck's Pulmonic Sirup.—This famous sirup contains wormwood $\frac{1}{2}$ oz., catnip $\frac{1}{2}$ oz., tansy $\frac{1}{2}$ oz., hyssop $\frac{1}{2}$ oz., hoarhound $\frac{1}{2}$ oz., hops $\frac{1}{2}$ oz., camomile $\frac{1}{2}$ oz., comfrey $\frac{1}{2}$ oz., senega $\frac{1}{2}$ oz., elecampane $\frac{1}{2}$ oz. Boil with sufficient water to make, after straining, one quart; then add: gum arabic $1\frac{1}{2}$ oz., licorice $1\frac{1}{2}$ oz. Then add one good-sized Indian turnip, and finally add sugar 3 lb., brandy $\frac{1}{2}$ pt., juice of two lemons.

Red Star Cough Sirup.—According to *New Idea*, this nostrum contains cherry bark, tar, chloroform, and bitter almonds.

Ransom's Hive Sirup and Tolu.—Fluid ext. squills 2 fl. dr., fluid ext. senega 2 fl. dr., soluble essence tolu 2 fl. dr., tartar emetic 4 gr., white sugar 4 oz. av., water to make 4 fl. oz.

Peekskill's Cough Sirup.—Sirup of tolu 5 fl. oz., sirup of ipecac 1 fl. oz., paregoric 4 fl. dr., sirup of wild cherry 1 fl. oz.

Melbom's Pectoral Balsam.—Benzoin 10 parts, dragon's blood 10 parts, opium 10 parts, bals. Peru 10 parts, spermaceti 5 parts, butter 10 parts, sweet oil of almonds 50 parts, oil of turpentine 100 parts, acetic acid 2 parts.

Locock's Pulmonic Wafers.—Sugar 10 dr., starch 10 dr., gum arabic 5 dr., lactucarium 75 gr. Equal parts each of vinegar of squills, oxymel of squills, wine of ipecac.

King's New Discovery.—Sulph. morphia 8 gr., fl. ex. ipecac $\frac{1}{2}$ dr., chloroform 60 drops, tinct. white pine 2 oz., water 7 oz., carbonate of magnesia $\frac{1}{4}$ oz., sugar 14 oz.

Keating's Cough Lozenges.—Lactucarium $7\frac{1}{2}$ gr., ipecac $3\frac{1}{4}$ gr., squills 3 gr., ext. licorice 3 dr., mucil. tragacanth sufficient.

Jayne's Expectorant.—Sirup squills 2 oz., tinct. tolu $1\frac{1}{4}$ oz., tinct. camphor 1 dr., tinct. digitalis 1 dr., tinct. opium 2 dr., wine ipecac 2 dr., antimon. and pot. tart. 2 gr.

Grandmother's Own Cough Remedy.—Liquid tar 5 gr., fluid ext. hemlock 1 fl. dr., powd. white sugar 2 oz. av.; add alcohol $\frac{1}{4}$ fl. oz., water $1\frac{1}{4}$ fl. oz., molasses 3 oz. av., fluid ext. ipecac 8 minims; mix well and add finally chloroform 1 fl. dr.

Gull's Cough Mixture.—Cod liver oil 1 fl. oz., fresh lemon juice 1 fl. oz., strained honey 1 fl. oz.

Good Samaritan Cough Sirup.—Morphia muriat, 1 gr., aq. lauro-cerasi 1 dr., sirupi 2 oz.

Bryan's Pulmonic Wafers.—“Warranted to give immediate relief, and to cure in a few days bronchitis, asthma, consumption, and all diseases of the lungs and chest.” Its sole ingredients are sugar and cornstarch.

Allen's Lung Balsam.—Tinct. sanguinaria 8 oz., tinct lobelia 8 oz., tinct. opium 4 oz., tinct. capsicum 1-2 oz., essence sassafras 1 oz., essence anise 1 oz., New Orleans molasses 1-2 gal.

Ayer's Cherry Pectoral.—Acetate of morphia 3 gr., tinct. bloodroot 2 dr., wine antimony 3 dr., wine ipecac 3 dr., sirup wild cherry 3 oz.

Bull's Cough Syrup.—Its sole ingredients are morphia and syrup.

Dellenbaugh's Cough Cure.—Picrate of ammon. 2 gr., chloride of ammon. 1 dr., extract of licorice 1 dr., water 3 fl. oz.

Firweil.—Solution bromine, iodine, and phosphorus 1 oz., fir bark in coarse powder 1 oz., white pine bark, coarse powder 1-2 oz., tamarac bark, coarse powder 1-2 oz., dilute alcohol 16 fl. oz., sugar 4 oz.

Gooche's Mexican Cough Syrup.—The following formula resembles the original: Fluid extract wild cherry 2 fl. dr., glycerine 6 fl. dr., simple syrup 2 fl. dr., syrup of tar, sufficient to make 3 fl. oz.

Buckler's Croup Mixture.—Tartar emetic 2 gr., pulv. ipecac 40 gr., syrup of squills 2 fl. oz.

Brodie's Liniment for Asthma.—Oil of stillingia 4 dr., oil of cajeput 2 dr., oil of lobelia 1 dr., alcohol 1 oz.

Hair's Asthma Cure.—Wine of tar 14 oz., iodide of potassium 220 gr.

Trafton's Balm of Life.—Iodide of potassium 80 parts, fl., ext. of opium 20 parts, fl. ext. of senega 50 parts, fl. ext. of squills 120 parts, alcohol 240 parts, water enough to make, by measure, 1920 parts.

Cleary's Asthma Powder.—Pulv. stramonium leaves 30 parts, pulv. belladonna leaves 30 parts, pulv. saltpeter 5 parts, pulv. opium 2 parts.

Langell's Asthma Remedy.—Powdered belladonna leaves 1 part, powdered nitrate of potash 10 parts.

Himrod's Asthma Cure.—Powdered lobelia 2 oz., powdered stramonium leaves 2 oz., powdered nitrate of potash 2 oz., powdered black tea 2 oz.

Upham's Asthma Remedy.—Pulv. stramonium leaves, pulv. skunk cabbage, pulv. lobelia.

Jackson's Cough Sirup.—Sirup of acacia, sirup of ipecac, sirup of senega, oil sassafras, sulphate morphia.

Wistar's Cough Lozenges.—Ext. licorice, powdered, gum arabic, powdered, sugar, powdered, oil anise, sulph. morphia, tinct. tolu, water.

Consumption Cure.—Sirup tolu, sirup wild cherry, tinct. hyoscyamus, sirup squills, chloric ether, water.

BITTERS.

A good description of the average "bitters" may be expressed in five words: "bad whiskey and bad medicines." Not a few of these compounds are more intoxicating than the strongest Scotch whiskey, and are regularly retailed over the bar of the saloon. Some of the most widely advertised of these compounds are the vilest mixtures imaginable; not one of the whole list can be recommended as useful under any circumstances.

Stoughton Bitters.—Orange peel 6 oz., gentian root 8 oz., Virginia snake root 1½ oz., American saffron ½ oz., red saunders ½ oz., alcohol 4 pints, water 4 pints.

Brown's Iron Bitters.—Iron 1 gr., calisaya bark 2 gr., phosphorus 1-200 gr., coca 1 gr., viburnum prunifolium 1 gr.

Hop Bitters.—Hops 4 oz., orange peel 2 oz., cardamon 2 drams, cinnamon 1 dram, cloves ½ dram, alcohol 8 oz., sherry wine 2 pints, simple sirup 1 pint, water sufficient.

Hostetter's Bitters.—These bitters contain, according to the *Medical Bulletin*, the following ingredients: sugar 2 lb., calamus root 2 lb., orange peel 2 lb., Peruvian bark 2 lb., gentian root 2 lb., columbo root 2 lb., rhubarb 8 oz., cinnamon 4 oz., cloves 2 oz., diluted alcohol 4 gal.

German Bitters.—German camomile 2 oz., sweet flag 2 oz., orris root 4 oz., coriander seed 1½ oz., centaury 1 oz., orange peel 3 oz., alcohol 4 pints, water 4 pints, sugar 4 oz.

Stomach Bitters.—Gentian root $1\frac{1}{2}$ oz., cinchona bark $\frac{1}{2}$ oz., orange peel $2\frac{1}{2}$ oz., cinnamon cort. $\frac{1}{4}$ oz., anise seed $\frac{1}{2}$ oz., coriander seed $\frac{1}{2}$ oz., cardamon seed $\frac{1}{2}$ oz., gum kino $\frac{1}{4}$ oz., alcohol 1 pint, water 4 quarts, sugar 1 pound.

French Absinthe.—Oil wormwood 1 dram, oil melisa 15 drops, oil anise $2\frac{1}{2}$ drams, oil star anise $2\frac{1}{2}$ drams, oil fennel $\frac{1}{2}$ dram, oil coriander 3 drops, alcohol 14 pints, water 6 pints.

Vinegar Bitters.—The following is Dr. Gibbon's account of the origin of Walker's Vinegar Bitters, a specimen of which we analyzed several years ago, and found to contain 5 per cent of alcohol:—

"This 'Bitters' is one of the nastiest nostrums, introduced and largely sold by the most extensive and brazen advertising under the false pretense of being free from alcohol. It originated with the cook of a party which traveled overland as a mining company to California in 1849; he settled in Calaveras county, and having no success as a miner, he turned his attention to the bitter qualities of the herbs growing about him, and came to San Francisco with the idea of making and vending a nostrum to be called 'Indian Vegetable Bitters.' He fell in with an enterprising druggist, who saw money in the project, and joined him. At the suggestion of the latter, the 'Indian' was struck out, and as the concoction got sour by fermentation, it was concluded to call it 'Vinegar Bitters,' and to identify it with the temperance movement. The native herbs which became rather troublesome to collect, were discarded, and aloes, being a cheap bitter, was substituted. 'Nine sick people out of ten,' said the druggist, 'will be cured by purging.' Wherefore the aloes and Glauber's salt. So the cook turned doctor, the decoction became sour and of Californian instead of Indian paternity, and 'Doctor Walker's Vinegar Bitters' began its career in the newspapers and on the shelves of the drug-stores."

The statement has recently been made that "Vinegar Bitters" is now manufactured of sour beer and aloes.

TONICS.

Tonics, like bitters, are generally a mixture of cheap alcohol and some common, cheap drug. They are of all nostrums the most deceptive. They often make the patient "feel better" temporarily, while they are really making him daily worse. They have been aptly termed, "nerve foolers," which delude the patient into fancied security while the disease steadily continues its inroads upon the body.

Ausburg Essence of Life.—Rad. rhei. 1 oz., myrrhæ 2 oz., rad. gentianæ 2 oz., croci. opt. $\frac{1}{2}$ oz., camphor $\frac{1}{2}$ oz., rad. zedoar. 1 oz., rad. angelicæ $2\frac{1}{2}$ oz., castor $\frac{1}{2}$ oz., aloes, socot. 2 oz., sp. vini. rect. 2 pts., aquæ 2 pts.

Murray's Infallible System Tonic.—Claimed to be the only scrofula, catarrh, blood, liver, and kidney medicine on earth. Aloes 50 gr., cinnamon, pulv. 25 gr., glycyrrhiza root, pulv., 25 gr., water sufficient.

Fellows' Hypophosphites.—Glucose 1 lb., simple sirup 1 pt., hypophosphite calcium 128 gr., hypophosphite potassium 48 gr., sulphate iron 48 gr., sulphate manganese 32 gr., sulphate quinine 14 gr., sulphate strychnine 2 gr., water sufficient.

Moxie.—This nostrum, which has been so widely advertised with the most brazen falsehoods and unscrupulous pretensions, instead of being concocted from a remarkable plant discovered by Lieutenant Moxie, is simply a decoction of oats, made into a sirup, and flavored with sassafras and wintergreen, according to the *Western Druggist*.

Kline's Nerve Restorer.—Bromide of ammonia 3 dr., bromide of potassium 3 oz., bicarb. of potassium 80 gr., tinct. columbo 6 fl. dr., water 6 fl. oz.

WORM MEDICINES.

The great increase in the frequency of tape-worm and other intestinal parasites, largely due to the general consumption of raw or undone beef, has given rise to the development of a class of irregular practitioners, who call themselves "worm specialists," and also to a special line of nostrums to which vermifuge properties are attributed. Some of these nostrums are effective, others worthless, none of them are superior to the prescription of a reliable physician. In fact, most of them are dangerous for use without the supervision of a wise physician, and ought not to be employed.

Swalm's Vermifuge.—Worm-seed 2 oz., valerian $1\frac{1}{2}$ oz., rhubarb $1\frac{1}{2}$ oz., pink root $1\frac{1}{2}$ oz., white agaric $1\frac{1}{2}$ oz.

Fahnestock's Vermifuge.—Castor oil 48 parts, oil worm-seed 48 parts, oil anise 24 parts, oil turpentine 1 part, tinct. myrrh 3 parts.

Procter's Vermifuge.—Santonine 16 gr., fluid ext. of senna 2 oz., fluid ext. of pink root 2 oz.

Freeman's Vermifuge Oil.—Oil of worm-seed $\frac{1}{2}$ oz., oil of turpentine 2 dr., castor oil $1\frac{1}{2}$ oz., pink root $\frac{1}{2}$ oz., hydrastin 10 gr., sirup of peppermint $\frac{1}{2}$ oz.

Patterson's Emulsion of Pumpkin Seeds.—Peel and pound two ounces of pumpkin seeds. Mix to a paste with sugar, add eight ounces of water. Take in two or three doses.

Kenkle's Vegetable Worm Sirup.—Santonine 27 gr., oil sassafras 1 minim, alcohol 2 fl. oz., fl. ext. pink root 2 fl. oz., fl. ext. dandelion $\frac{1}{2}$ fl. oz., fl. ext. golden seal $\frac{1}{4}$ fl. oz., molasses $\frac{1}{2}$ fl. oz.

LIVER AND KIDNEY CURES.

Probably no organs of the body suffer more abuse from patent medicines than do the liver and kidneys. Most of the remedies advertised for liver and kidney disorders are in the highest degree calculated to produce the very diseases which they claim to cure. The harmful character of the drugs will be recognized in many of the following analyses:—

Lee's Anti-Bilious Pills.—Calomel 30 gr., jalap 60 gr., gamboge 12 gr., tartar emetic 3 gr.

Tropic Fruit Laxative.—Jalap, powdered, 5 parts, senna, powdered, 5 parts, sugar 5 parts, tamarind pulp (E. I.) 30 parts.

Carter's Little Liver Pills.—Podophyllin $1\frac{1}{2}$ gr., aloes (Socotrine) $3\frac{1}{2}$ gr., mucilage of acacia sufficient.

Tarrant's Effervescent Seltzer Aperient.—Soda bicarbonate 168 parts, tartaric acid 150 parts, Rochelle salt 50 parts, magnesia sulphate 60 parts.

Catali's Specific.—Carbonate of lithium 1 part, carbonate of sodium 2 parts, citrate of potassium 4 parts.

Tamar Indien.—Tamarind pulp 450 parts, powd. sugar 40 parts, powd. sugar of milk 60 parts, glycerine 50 parts.

Combe's Aperient.—Sulphate of magnes. 35 parts, roasted coffee 40 parts, boiling water 500 parts.

Sirup of Figs.—Senna leaves 14 oz., coriander seed 6 oz., figs 24 oz., tamarind 18 oz., cassia pulp 18 oz., prunes 12 oz., ext. licorice $1\frac{1}{2}$ oz., ess. peppermint $1\frac{1}{2}$ oz., sir. simp. 1 gal

Dow's White Liquid Physic.—Sodium sulphate 8 oz., dissolve in water 24 oz., then add nitro-muriatic acid 2 fl. oz., powdered alum 68 gr.

Simon's Liver Regulator.—Hepatica 1 oz., leptandra 1 oz., serpentaria 1 oz., senna $1\frac{1}{2}$ oz.

Radway's Regulating Pills.—Each box contains from 29 to 31 sugar-coated pills of unequal size. They consist of 30 grains of aloes, 15 grains of jalap, 8 grains of gamboge, and some inert substance.

Eno's Fruit Salt.—Soda bicarbonate 168 parts, tartaric acid 150 parts, Rochelle salt 110 parts.

Hamburg Tea.—This is composed of senna leaves and stems, coriander fruits, manna, and tartaric acid.

Fleury's Tasteless Cascarine.—This remedy is recommended to be "harmless. A new remedy for biliousness, costiveness, dizziness, headache, and torpid liver." An examination shows it to be sub-nitrate of bismuth and calomel rubbed up with powdered cane sugar. Its name is wholly misleading.

Holmes's Liver Pills.—Colocynth pulp 1 oz., gamboge 1 oz., scammony 1 oz., Barb. aloes. 2 oz., castile soap $\frac{1}{2}$ oz., oil peppermint 2 fl. dr., water sufficient.

Garfield Tea.—This consists chiefly of senna leaves and couch grass.

Holloway's Pills.—Aloes 2 dr., rhubarb 1 dr., capsicum 20 gr., saffron 5 gr., sulphate of soda 5 gr.

Dehaut's Purgative Pills consist of scammony resin, powdered rhubarb root, and the extracts of colocynth and dandelion root. They are coated with red-colored sugar.

Morrison's Pills.—Each pill weighs $2\frac{1}{2}$ grains; they consist of equal parts of aloes, colocynth, and cream tartar; those in boxes marked No. 2 contain, besides these ingredients, gamboge.

Hamburg Drops.—Powdered Socotrine aloes $1\frac{1}{2}$ oz., American saffron $\frac{1}{2}$ oz., tincture of myrrh 16 oz.

R. V. Pierce's Pleasant Purgative Pellets.—Each little bottle contains from 28 to 36 small sugar-coated pills of unequal size, and weighing in all, from 18 to 22 grains. Their cathartic effect is due solely to podophyllin, the resin of the root of the May apple.

Helmbold's Buchu.—This much advertised nostrum contains buchu, uva ursi, licorice root, caramel, molasses, cubebs, alcohol, peppermint, and water.



Wayne's Diuretic Elixir.—Potass. acetate 3 oz., fl. ext. buchu 3 oz., fl. ext. juniper $1\frac{1}{2}$ oz., simple sirup sufficient to make 1 pint.

Warner's Safe Cure.—According to the *Druggists' Circular*, the following formula resembles this secret preparation: Nitrate potash 320 gr., liverwort 1 oz., alcohol 2 oz., glycerine $1\frac{1}{4}$ oz., essence of wintergreen 40 drops, water sufficient to make 16 fl. oz.

Another authority gives the following formula: Fl. ext. buchu, fl. ext. Pareira brava, fl. ext. mandrake, fl. ext. leptandrin, spirits nitre, dulc., oil juniper, bicarb. potassa, sirup orange peel.

AGUE CURES.

Many people are under the false impression that ague, or other forms of malarial disease, may be better combated by some patent nostrum which claims to be able to accomplish what no medicine can do, than by the employment of the remedies usually prescribed by qualified physicians. The folly of trusting to these popular nostrums is well shown by a perusal of the following analyses of popular ague cures. The first five mentioned were made a number of years ago by O. L. Churchill, an unrivaled chemist. It will be noticed that all the nostrums in the list, with the exception of two, contain quinine. One of these, Rhode's, contains practically nothing, its ingredients being simply a solution of iron with a little animal charcoal added. Another, "Febriline," which

claims to be a tasteless sirup of quinine, contains no quinine at all, but other substances, such as cinchona bark, which are of similar nature.

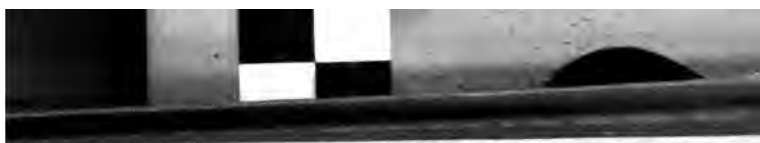
Ayer's Ague Cure.—Each bottle contains six ounces of a dark red sirupy liquid, with a slight white sediment, a very bitter taste, and an odor of wintergreen oil. It consists of an alcoholic tincture of cinchona bark, with the addition of about three grains of quinoidine and three grains of sulphate of cinchonine for each fluid ounce, dissolved by the aid of sulphuric acid; it is sweetened with sugar and flavored with oil of wintergreen. The white sediment is sulphate of lime.

Jayne's Ague Mixture.—Each bottle contains $7\frac{1}{2}$ fluid ounces of a mixture having the odor and taste of rhubarb, dandelion, and common molasses. It contains sulphate of quinine and traces of other cinchona alkaloids, but not enough to render the mixture very bitter.

Rhode's Fever and Ague Cure, or Antidote to Malaria.—Each bottle contains 12 fluid ounces of a black turbid liquid, having a sweet and astringent taste. The sediment, filling about one third of the bottle after standing, is powdered animal charcoal, while the solution is nothing but sweetened water with a little tincture of chloride of iron, with the addition of a little sulphate of iron (copperas).

Wilhoft's Anti-Periodic Fever and Ague Cure.—Each bottle contains four fluid ounces of a thin, dark-red liquid, with the odor of cinchona bark, and a very bitter and acid taste. It consists of an infusion of cinchona bark made with water, and the addition of a solution of sulphate of quinine in aromatic sulphuric acid. Each fluid ounce contains 3 grains of sulphate of quinine.

Christie's Ague Mixture.—Each bottle contains 7 fluid ounces of a very dark, sirupy liquid, one fourth filled with sediment, and having a very bitter and peppery taste and the odor of common molasses. The sediment is powdered Spanish pepper and a little resinous matter. The solution consists of



a tincture of cinchona bark, with the addition of sulphate of cinchonine and common molasses.

Febrilline.—According to the *Druggists' Circular*, "Febrilline, or Tasteless Sirup of Amorphous Quinine," manufactured by the Paris Medicine Co., of Paris, Tenn., contains no quinine at all, although the label of each bottle states that it contains 24 grains of quinine.

Hamlet's Ague Pills.—Sulph. quinine 2 dr., powdered myrrh 1 dr., powdered capsicum 1 dr.

Kreyder's Ague Pills.—Sulph. quinine 20 gr. Dover's powder 10 gr., sub. carb. iron 10 gr.

Begg's Fever and Ague Pills.—According to *New Idea*, these pills contain 1 grain of sulphate quinine, $\frac{1}{2}$ grain cinchona, 1 grain rhubarb, and a little flavoring.

Anti-Chill Pills.—Chinoidine, oil black pepper, ferrocyanide of iron, arsenious acid.

Osgood's Cholagogue, or Celebrated Ague Cure.—Sulph. quinine, fl. ext. leptandrin, saturated tinct. of queen's root, fl. ext. podophyllin, oil sassafras, oil wintergreen.

BLOOD REMEDIES.

THE popular notion that the blood is to be purified by putting some sort of nasty medicine into it, has created a demand for a vast number of remedies which are claimed to possess a marvelous potency in the purification of the vital fluid. The majority of these remedies are of a very pernicious nature, especially when used for any considerable length of time, effecting great injury, particularly to the stomach and kidneys. The danger of swallowing secret nostrums of this

character will be readily appreciated by a perusal of the following formulæ:—

Bull's Blood Sirup.—Iodide of potash 12 dr., red iodide of mercury 2 gr., tincture of poke root 3 dr., comp. sirup of stillingia 6 oz., simple sirup, to make 1 pt.

Clark's Blood Mixture.—Iodide of potassium 64 gr., chloric ether 4 dr., liquor potash 30 drops, water $7\frac{1}{2}$ fl. oz. Caramel to color.

Cuticura Resolvent.—According to the *St. Louis Druggist*, this preparation is said to be: aloes, Socot. 1 dr., rhubarb, powdered, 1 dr., iodide potass. 36 gr., whiskey 1 pt.

Sirup of Stillingia Compound.—Fl. ext. Stillingia comp. 1 fl. oz., fl. ext. corydalis 1 fl. oz., fl. ext. blue flag $\frac{1}{2}$ fl. oz., fl. ext. elder flowers $\frac{1}{2}$ fl. oz., fl. ext. prince's pine $\frac{1}{2}$ fl. oz., fl. ext. prickly ash berries $\frac{1}{4}$ fl. oz., fl. ext. coriander $\frac{1}{4}$ fl. oz., sugar 14 oz., water sufficient to make 1 pint.

Hartley's South American Cure.—This nostrum, which the manufacturers claim to be composed of roots, herbs, seeds, barks, and flowers growing exclusively in South America, was found by *New Idea* to be composed of "fluid extract of rhubarb 8 parts, fluid licorice and anise each 2 parts, fluid capsicum $\frac{1}{3}$ part, fluid aloes $\frac{1}{6}$ part, alcohol 6 parts, water enough to make 32 parts, to which a small percentage of sodium bicarbonate is added." This is a fair sample of the composition of remedies which are claimed to be made of choice foreign herbs.

Hunter's Red Drops.—Corrosive sublimate 10 gr., muriatic acid 12 drops, compound spirits of lavender 1 oz.

Dr. Radway's Renovating Resolvent.—Potassium iodide 1.5 grm., con. sarsaparilla decoction 15 grm., bitter almond water 10 grm., sirup 30 grm., Parrish's simple elixir 90 grm., distilled water 250 grm., caramel sufficient to color.

Elixir of Life.—Powdered rhubarb, powdered ginger, powdered aloes, powdered gum myrrh, powdered cayenne, powdered saffron, powdered sassafras bark, powdered golden-seal root, brandy or whiskey.



Perry's Compound Sarsaparilla Blood Purifier.—Turkey-corn root 2 lb., stillingia root 2 lb., sarsaparilla root 2 lb., yellow-dock root 2 lb., sassafras bark 1 lb., simple sirup 2 gal., diluted alcohol 32 pints, iodide potassa 2 lb., water sufficient to make 6 gal.

Jayne's Alterative.—Tartar emetic 4 gr., spirits of camphor 1 fl. dr., fluid extract of ipecac 4 drops, laudanum 2 fl. dr., tinct. of lobelia 1 fl. dr., sirup of tolu 12 fl. dr., tinct. of digitalis 1 fl. dr., sirup squills 2 fl. oz.

Mother Siegel's Sirup.—Conc. decoction of aloes (1 to 4) of drops, borax 1.3 grm., capsicum, powdered 0.13 grm., gentian, powdered 2.3 grm., sassafras oil 0.3 grm., wintergreen oil 0.12 grm., rectified spirit 7.5 grm., fluid extract dandelion 7.5 grm., sirup 125 grm.

August Flower.—Rhubarb, golden seal, cape aloes, peppermint leaves, carbonate of potassa, capsicum, sugar, alcohol, water, ess. peppermint.

Laville's Gout Cure.—Quinine 7.7 gr., cinchonine 9.3 gr., colocynthin 3.8 gr., lime salts 7.6 gr., coloring matter 4.6 gr., alcohol $3\frac{1}{3}$ fl. dr., water $2\frac{1}{3}$ fl. dr., port wine 1234.0 fl. dr.

PAIN KILLERS.

THE uneducated or unthinking person, when suffering pain, cares only for relief from pain, without consideration of the means by which the relief shall come, or of the relation of the remedy to the causes by which the pain may be produced. Pain is not in itself a disease, it is only a symptom. To relieve pain by the use of a narcotic of some sort, is simply an obscuring of the indication which nature is holding out for the purpose of calling attention to some morbid

condition which needs to be relieved, of which the pain is merely a sign, and not the thing itself. We herewith present analyses of a large number of popular "pain-killers," which we have gathered from a variety of reliable sources. Pain should be relieved by the removal of the cause, not by the "knock-down argument" of a narcotic. "Pain-killers" are among the most pernicious of drugs, and often aggravate and perpetuate the very maladies for which they are used. In hundreds of instances the opium habit has been acquired by the use of these narcotic nostrums. Thousands of babies have been killed by the employment of these dangerous "quieting potions."

Chlorodyne.—Chloroform 1 dr., morphia 5 gr., ether $\frac{1}{2}$ dr., oil peppermint 4 drops, dil. hydrocyanic acid 1 dr., tinct. cap-sici 1 dr., molasses 10 dr., ext. licorice 15 gr.

Yellow Family Drops.—Opium 2 oz., sapo venet 1 lb., croci opt. $2\frac{1}{2}$ oz., sp. rosemarini 2 lb.

Mrs. Winslow's Soothing Sirup.—This nostrum comes in vials containing $1\frac{1}{4}$ fluid ounces; it consists of sugar sirup strongly flavored with an alcoholic tincture of fennel, anise, and a little caraway seed, or an alcoholic solution of their essential oils, with or without an admixture of solution of sulphate of morphine in various quantities. While recently it has been found not always to contain morphine, at times as much as one half of a grain and more has been found contained in each fluid ounce of the sirup, as often reported in the course of years in medical and pharmaceutical journals. In regard to the dangers of this nostrum, which conceals morphine under a legitimate designation, and offers it for administration to infants, a medical writer in the *Pacific Medical and Surgical Journal*, remarks: "It would be scarcely possible to estimate the number of children which it sends to the grave before they



reach their second year. Another still graver question is: How much of the physical disease, drunkenness, degradation, and vice, and how many of the weakened intellects, are due to the use of the soothing sirup in infancy?"

Coaline Headache Powders.—The manufacturers guarantee these powders to cure sick headache, neuralgia, and effects due to exposure to the sun, fatigue, and alcoholic excesses. It is guaranteed to contain no opium, chloral, morphine, or other narcotics, to be perfectly harmless and to leave no after-effects. An analysis made by *New Idea* shows the powders to consist chiefly of antipyrine, a newly discovered and very powerful substance derived from coal tar. It relieves pain, but has a most depressing effect upon the heart, and is a dangerous remedy, except in the hands of a wise physician.

Flagg's Relief.—Oil of cloves, about 1 dr., oil of sassafras, about 2 dr., spirits of camphor, about 1½ dr.

Stedman's Soothing Powders.—Opium pulv. 3 gr., ipecac 1 gr., milk sugar 8 gr., rice flour 12 gr.

Fosgate's Anodyne Cordial.—Fl. ext. rhubarb 5 fl. dr., fl. ext. rhatany 2 fl. dr., fl. ext. ginger 6 minims., paregoric 1 fl. dr., simple sirup 1 fl. dr., dilute alcohol 5 fl. dr.

Senckenberg's Migraine Pastilles.—Antipyrine 4½ gr., antifebrin 7½ gr., rhubarb ¾ gr., calamus ½ gr., cinchona ½ gr.

Kephalgine.—Antipyrine 5 parts, roasted coffee 5 parts, caffeine 2 parts, salicylate of sodium 2 parts.

Lavarre's Sure Cure.—Each bottle of this remedy is said to contain "the virtues of two pounds of the choicest barks and herbs!" It is claimed to be a sure cure for neuralgia, rheumatism, toothache, headache, backache, and all diseases of the nervous system. Here is the composition, according to *New Idea*: fl. ext. poke berries 80 minims, fl. ext. sassafras 40 minims, liquid ammonia, caustic 5 minims, sodium bromide 20 gr., alcohol ½ fl. oz., oil peppermint 1 minim, powdered cochineal 4 gr., white sugar 3 dr. Troy, water (enough to make) 4 fl. oz.



Radway's Ready Relief.— $2\frac{1}{2}$ fluid ounces (in a 50 ct. bottle) of a light brown liquid consisting of 2 ounces of soap liniment, 2 drams alcoholic tincture of Spanish pepper, and 2 drams of strong aqua ammonia (hartshorn).

Lindsey's Pain Cure.—Alcohol 4 oz., ethereal oil of wine 4 dr., tinct. of capsicum and myrrh, 4 oz., spirits camphor 4 oz., oil hemlock 2 oz., oil cinnamon 1 dr., oil sassafras 1 oz., oil cloves 4 dr., ether 2 oz., chloroform 2 oz., sweet spirits of nitre 4 oz., chloral hydrate 2 oz., lard oil 4 oz., oil cedar 4 oz., oil organum 1 oz., oil wintergreen 2 dr.

Quick Stop for Headaches.—This remedy consists of a mixture of camphor with some greenish coloring matter. Each dose contains about one fourth grain of cocaine, a most seductive drug, which might easily lead to a contraction of the cocaine habit, which is, if possible, ten times worse than the morphia habit.

Little Hop Pills.—Recommended for headache, biliousness, weak nerves, dyspepsia, constipation, deranged liver, and general debility. Podophyllin 3 gr., ext. colocynth 6 gr., oil peppermint 1 drop, ext. rhubarb sufficient for 12 pills.

Powell's Balm of Anise Seed.—Similar to paregoric, the camphor being left out, and extract of licorice and anise seed oil added.

Papine.—This preparation is simply a deodorized tincture of opium. Each teaspoonful represents more than a grain of opium. It needs no comment to enable the reader to recognize the dangerous character of this nostrum.

Pope's Cure for Neuralgia.—Iodide potash 4 dr., ext. conium 1 dr., comp. tinct. cinchona 2 fl. oz., sirup sarsaparilla 4 fl. oz.

Parson's Local Anæsthetic.—Chloroform 12 parts, tinct. aconite 12 parts, tinct. capsicum 4 parts, tinct. pyrethrum 2 parts, oil cloves 2 parts, camphor 2 parts.

Perry Davis's Pain Killer.—Gum myrrh $2\frac{1}{4}$ lb., capsicum 10 oz., gum opium 8 oz., gum benzoin 6 oz., gum guaiac 3 oz., gum camphor 10 oz., alcohol 5 gal.

Bromidia.—Bromidia potassa, chloral hydrate, solid ext. hyoscyamus, solid ext. cannabis indica, alcohol, soft water.

German Rheumatic Remedy.—Wine colchicum, tinct. opium, spirits nitre, dulc.

CATARRH CURES

The reader will notice in a perusal of the following analyses of popular remedies for catarrh, that none of them contain other than the simplest and most common ingredients, the use of which has long been known to the regular profession :—

Ely's Cream Balm.—Vaseline 1 oz., thymol 3 gr., carb. bismuth 15 gr., oil wintergreen 2 minims.

Wel de Meyer's Catarrh Cure.—According to *New Idea*, this much-vaunted remedy consists simply of bicarbonate of soda. The first cost of the contents of a single box is about one tenth of a cent. The retail price is \$1.50.

Hall's Catarrh Cure.—*New Idea* is also authority for the following analysis of this popular remedy : Gentian root in coarse powder $1\frac{1}{4}$ oz., bitter orange peel in coarse powder 5 dr., cardamom seeds in coarse powder 100 gr., potassium iodide 1 oz., dilute alcohol sufficient.

Dr. Sykes's Catarrh Cure.—According to a Canadian chemist, this remedy consists of chlorate of potash and powdered licorice root, flavored with wintergreen.

Sanford's Radical Cure for Catarrh.—An analysis made by Prof. Lyons shows this nostrum to consist of distilled extract of witch hazel, with alcohol, glycerine, morphia, nitre, and bicarbonate of soda.

Saul's Catarrh Remedy.—Comp. tinct. benzoin 2 oz., tinct. tolu 2 oz., chloroform 1 dr., sulphuric ether 1 dr., aromatic spirits ammonia 1 oz., oil tar 1 dr., rectified spirits 5 oz.

Sage's Catarrh Remedy.—Dr. Sage, who sold the prescription to Dr. Pierce, the Buffalo quack, is himself authority for the following formula : Powdered *hydrastis canadensis* 1 oz., powdered borax 10 gr., salt 10 gr., ferro-cyanuret of iron sufficient to color.

EYE REMEDIES.

Certainly a great amount of mischief has been done by the use of eye waters, salves, etc., manufactured and sold as cure-alls for a great variety of maladies to which the eye is subject. A knowledge of the nature of these remedies, most of which contain drugs of the most dangerous character, should be a sufficient warning against their use.

Becker's Eye Salve.—Calamine 1½ dr., tutty 1½ dr., red oxide mercury 6 dr., camphor in powder 1 dr., almond oil 1 dr., white wax 1½ oz., fresh butter 8 oz.

Thompson's Eye Water.—Sulphate copper 10 gr. sulphate zinc 40 gr., rose-water 2 pts, tinct. saffron 4 dr., tinct. camphor 4 dr.

Golden Eye Water.—Sulphate hydrastia 2 gr., distilled water 1 oz.

Petit's Eye Salve.—Olive oil 4 dr., spermaceti 1½ dr., white wax ½ dr.

Mitchell's Eye Salve.—Saxoline, snow white, 350 gr., white wax 130 gr., oxide zinc 45 gr., oxide mercury 5 gr., oil of lavender 10 drops.

Egyptian Eye Salve.—White resin 6 dr., Burgundy pitch 30 gr., beeswax 30 gr., mutton tallow 30 gr., Venice turpentine 30 gr., balsam fir 30 gr.

HAIR DYES, RESTORATIVES, ETC.

These nostrums almost invariably contain lead, and numerous cases of lead poisoning and paralysis have resulted from their use. The following analyses are from reliable sources :—

Allan's World's Hair Restorer.—Sulphur 6 parts, acetate lead 8 parts, glycerine 100 parts, water, flavored, 200 parts.

Hall's Hair Renewer.—Sulphur precipitated 1 dr., lead acetate 1 dr., salt 2 dr., glycerine 8 fl. oz., bay rum 2 fl. oz., Jamaica rum 4 fl. oz., water 16 fl. oz.

Skinner's Dandruff Mixture.—Chloral hydrate 1 part, glycerine 4 parts, bay rum 16 parts.

Ayer's Hair Vigor.—Acetate lead 3 parts, flowers sulphur 2 parts, glycerine 14 parts, water 80 parts.

Seven Sutherland Sisters' Hair Grower.—Advertised as "a sure hair promoter." According to the analysis made by *New Idea*, its composition is as follows : Stearns's bay rum 7 fl. oz., dist. ext. witch hazel 9 fl. oz., common salt 1 dr., hydrochloric acid (5 per cent) 1 drop, magnesia sufficient.

Lyon's Kathairon.—Castor oil 1 fl. oz., tinct. cantharides 1 fl. dr., oil bergamot 20 minims, stronger water of ammonia 1 drop, alcohol sufficient to make 3 fl. oz.

DENTIFRICES.

Many of these preparations contain harmful ingredients. In more than one instance the teeth have been irreparably damaged by their

use. Not long since we examined a preparation which had been extensively peddled about the country, and found it to consist simply of hydrochloric acid dissolved in water. This remedy, when applied to the teeth, quickly removed the tartar, but would also destroy the enamel.

Brown's Camphorated Saponaceous Dentine.—The composition of this nostrum, according to *New Idea*, is 71 parts of chalk, and 29 parts of soap and camphor.

Van Buskirk's Fragrant Sozodont.—The following formula is said to produce an article identical in all essential features: Alcohol 1 fl. oz., water $1\frac{1}{4}$ fl. oz., soap 120 gr., oil of wintergreen 2 minims, red saunders sufficient.

Fragrant Sozodont Powder.—Infusorial earth 40 parts, precipitated chalk 200 parts, orris root 125 parts, flavor with oil cloves.

Calder's Saponaceous Dentine.—Chalk 56 parts, soap 44 parts, flavor with wintergreen.

CORN CURES.

Llebig's Corn Cure.—Extract of cannabis indica 5 parts, salicylic acid 30 parts, collodion 240 parts. To be applied with a camel's-hair pencil four nights and mornings in succession, until a thick coating is formed.

Hanson Magic Corn Cure.—Lard 1 oz., salicylic acid 1 dr.

Triumph Corn Plaster.—Guaranteed to be a sure cure, with no pain and no trouble. This is simply a cheap plaster to which is added a mixture of resin 3 parts, balsam fir 2 parts, and salicylic acid 5 parts. The salicylic acid dissolves the corn.

Rogers's Excelsior Corn Cure.—Fluid ext. cannabis indica 1 dr., sulph. morphine 20 gr., salicylic acid 10 gr., collodion to

make 2 fl. oz. In using, the corn is pared down thin, the mixture is then applied until a thick coat is formed. When the coating comes off, the corn comes away with it, or can be easily picked out.

Corn Cure.—Tannin 30 grains, tinct. iodine, acetic acid, glycerine, each 1 dram.

LINIMENTS AND OINTMENTS.

Carpenter's Liniment.—Chloroform, olive oil, aqua ammonia, sulph. morphia, alcohol.

Loomis's Liniment.—Alcohol, aqua ammonia, oil origanum, gum camphor, opium, gum myrrh, common salt.

Good Samaritan Liniment.—Oil sassafras, oil hemlock, spirits turpentine, tinct. cayenne, tinct. guaiac, tinct. opium, of each 1 oz.; tinct. myrrh 4 oz., oil origanum 2 oz., oil wintergreen $\frac{1}{2}$ oz., gum camphor 2 oz., chloroform $1\frac{1}{2}$ oz., alcohol $\frac{1}{2}$ gal.

Fluid Lightning.—Aconitin 1 gr., essential oil of mustard 1 dr., glycerine 1 oz., alcohol 4 oz.

Magnetic Liniment.—Tinct. cantharides 2 dr., oil origanum 1 oz., mur. ammonia 2 dr., sulph. ether 1 oz., alcohol 1 pt.

German Liniment.—Oil origanum 1 oz., oil sassafras, 1 oz., gum camphor $\frac{1}{2}$ oz., Granville's lotion 3 dr., chloroform $3\frac{1}{2}$ dr., tinct. aconite $\frac{1}{2}$ oz., tinct. capsicum $\frac{1}{2}$ oz., camp. soap liniment 1 oz., alcohol $\frac{1}{2}$ gal.

Chapman's Liniment.—Balsam fir 1 oz., oil sassafras 1 $\frac{1}{2}$ oz., oil hemlock $\frac{1}{2}$ oz., oil cedar $\frac{1}{2}$ oz., sweet spts. nitre 1 oz., tinct. guaiac 1 oz., sulph. ether 1 oz., oil wintergreen 2 oz., gum camphor $\frac{1}{2}$ oz., chloroform 1 oz., tinct. capsicum 2 oz., oil origanum $\frac{1}{2}$ oz., oil turpentine 2 dr., oil wormwood $\frac{1}{2}$ oz., fl. ext. hydrastis $\frac{1}{2}$ oz., alcohol $\frac{1}{2}$ gal.

Bareel's Indian Liniment.—Tinct. capsicum 1 dr., oil origanum, oil sassafras, oil pennyroyal, oil hemlock, of each $\frac{1}{2}$ oz.; alcohol 1 qt.

Eclectic Stillingia Liniment for Croup.—Oil stillingia 8 dr., oil cajeput 4 dr., oil lobelia 2 dr., alcohol 16 dr.

Thomas's Electric Oil.—Gum camphor 4 dr., oil gaultheria 4 dr., oil origanum 4 dr., chloroform 1 oz., tinct. opium 1 oz., oil sassafras 1 oz., oil hemlock 1 oz., oil turpentine 1 oz., balsam fir 1 oz., tinct. guaiacum 1 oz., tinct. catechu 1 oz., alcohol 4 pt., alkanet sufficient to color.

Liniment for Man and Beast.—Powdered myrrh 1 oz., powdered aloes 1 oz., balsam fir 1 Troy oz., alcohol 8 fl. oz.

Godfrey's Cordial.—Tinct. opium, molasses, alcohol, water, carb. potassa, oil sassafras.

Barker's Bone and Nerve Liniment.—Recommended for man and beast. Camphor 70 gr., oil tar $\frac{1}{2}$ fl. dr., oil thyme 1 fl. dr., oil turpentine 2 fl. dr., Franklin oil (black oil, lubricating oil) sufficient to make 2 fl. oz.

Metz's Balsam.—Linseed oil 180 parts, olive oil 180 parts, oil laurel berries 30 parts, turpentine (oleo-resin) 60 parts, powdered aloes 8 parts, powdered verdigris 12 parts, powdered white vitriol 6 parts, oil juniper 15 parts, oil cloves 4 parts.

Wilson's Lightning Liniment.—Oil cedar 3 oz., oil sassafras 3 oz., tinct. opium 3 oz., tinct. guaiac 3 oz., tinct. capsicum 3 oz., aqua ammonia 4 oz., spirits camphor 4 oz., spirits turpentine 4 oz., chloroform 3 oz., alcohol 1 gal.

Brodie's Liniment.—Sulphuric acid 1 dr., olive oil 1 oz., turpentine 1 oz.

Tobias's Venetian Liniment.—Spirits ammonia 5 parts, camphor 2 parts, tinct. capsicum 5 parts, alcohol 34 parts, water 10 parts.

Hamlin's Wizard Oil.—Tinct. camphor 1 oz., aqua ammonia $\frac{1}{2}$ oz., oil sassafras $\frac{1}{2}$ oz., oil cloves 1 dr., chloroform 2 dr., turpentine 1 dr., alcohol $3\frac{1}{2}$ oz.

Oil of Gladness.—Oil marjoram 1 fl. dr., oil peppermint 1 fl. dr., oil horsemint 1 fl. dr., ether 2 fl. dr., tinct. of capsicum 4 fl. dr., tinct. of opium 1 fl. dr., tinct. of red saunders 1 fl. dr., alcohol, sufficient quantity to make 8 fl. oz.

Centaur Liniment (for Man).—Oil pennyroyal $\frac{1}{2}$ oz., oil thyme $\frac{1}{4}$ oz., oil turpentine $\frac{1}{4}$ oz., soap 130 gr., caustic soda 10 gr., water to make 1 pt.

Centaur Liniment (for Beast).—Oil spearmint 1 dr., oil mustard 15 minims, oil turpentine $\frac{1}{4}$ oz., oil amber (crude) $\frac{1}{2}$ oz., black oil $\frac{1}{2}$ oz., soap 130 gr., caustic soda 10 gr., water to make 1 pt.

California Liniment.—Tinct. myrrh 1 oz., tinct. capsicum 1 oz., sweet spirits nitre 1 oz., sulph. ether 1 oz., chloroform $\frac{1}{2}$ oz., tinct. arnica 1 oz., oil spearmint 2 dr., oil wintergreen 2 dr., oil lobelia 1 dr., aqua ammonia $\frac{1}{2}$ oz., alcohol 1 qt.

Gum's Rheumatic Liniment consists of one oz., each of linseed oil, oil of cedar, and oil of amber, and one half oz. each of olive oil, turpentine, and laudanum.

Nerve and Bone Liniment.—Oil origanum 4 oz., oil rosemary 4 oz., oil amber 4 oz., oil hemlock 4 oz., turpentine 4 pts., linseed oil 6 pts.

Green Wonder Oil.—Terebinth Venet. 4 oz., zinci sulphat 15 gr., cupri acetat $1\frac{1}{2}$ oz., bals. Peru 1 dr., ol. olivæ 1 lb., ol. lini. 1 lb.

Mexican Mustang Liniment.—Oil turpentine $\frac{1}{2}$ dr., oil thyme $\frac{1}{2}$ dr., oil amber (crude) $\frac{1}{2}$ dr., black oil 1 dr., kerosene oil 3 dr., water 3 oz. 2 dr., soap 35 gr., caustic potash 3 gr.

Great London Ointment.—Acetate of morphia 10 gr., chloroform 1 oz., olive oil 1 oz., water of ammonia 1 oz.

Low's Magnetic Liniment.—Oil turpentine 90 parts, tinct. capsicum 120 parts, spirits camphor 960 parts, stronger water of ammonia 90 parts, alcohol (sp. gr. 820) 180 parts, oil sassafras 6 parts, fl. ext. sassafras 40 parts.

Giles's Iodide of Ammonia Liniment.—Iodine 1 dr., camphor 1 oz., oil rosemary $\frac{1}{2}$ oz., oil lavender $\frac{1}{2}$ oz., aqua ammonia 4 oz., alcohol 2 pts.

Listerine.—Acid boric 2 dr., acid benzoic 2 dr., dissolve in water 64 oz., fl. ext. baptisia 4 dr., menthol 2 dr., oil eucalyptus 3 dr., oil gaultheria $\frac{1}{2}$ dr., dissolve in alcohol 64 oz.

"That Liniment."—Oil turpentine 1 oz., oil spike 1 oz., oil origanum 1 oz., Barbadoes tar 2 dr., spirits camphor $\frac{1}{2}$ dr.

St. John Long's Liniment.—Yolks of eggs 8, oil turpentine 24 fl. oz., acetic acid 16 fl. oz., water 24 fl. oz.

Genuine White Oil Liniment.—Ammonia carbonate 19 parts, camphor 20 parts, oil turpentine 21 parts, oil origanum 20 parts, castile soap 19 parts, water to make 300 parts (by weight).

Kitchell's Liniment.—Water ammonia 1 part, water 3 parts, caramel to color.

J. L. St. John's Liniment.—Turpentine 7 oz., sweet oil 3 oz., tinct. arnica 4 oz., oil origanum 1 oz., oil hemlock 1 oz., oil juniper 1 oz., oil amber 2 oz., laudanum 2 oz., spirits ammonia $\frac{1}{2}$ oz., camphor $\frac{1}{2}$ oz.

Gargling Oil.—Crude petroleum 13 fl. oz., ammonia water 6 fl. oz., soft soap 16 fl. oz. benzine 16 fl. oz., crude oil amber 2 fl. oz., tincture iodine 1 fl. oz., water 5 pts.

Kickapoo Indian Oil.—Camphor $\frac{1}{2}$ oz. Troy, oil turpentine 1 fl. dr., oil peppermint $\frac{1}{2}$ fl. dr., oil wintergreen $\frac{1}{2}$ fl. dr., tinct. capsicum $\frac{1}{2}$ fl. oz., alcohol sufficient to make 1 pt.

St. Jacobs' Oil.—Gum camphor 1 oz., chloral hydrate 1 oz., chloroform 1 oz., sulph. ether 1 oz., tinct. opium $\frac{1}{2}$ oz., oil origanum $\frac{1}{2}$ oz., oil sassafras $\frac{1}{2}$ oz., alcohol $\frac{1}{2}$ gal.

Oil of Spike.—Petroleum Barbadoes 4 oz., spirits turpentine 4 oz., oil linseed 1 pt., oil seneca 4 oz.

Favorite Liniment.—Black oil 2 oz., alcohol 3 oz., tinct. arnica 2 oz., British oil 2 oz., oil of tar 1 oz.

Opodeldoc Liniment.—Alcohol 1 qt. gum camphor 1 oz., sal. ammoniac $\frac{1}{4}$ oz., oil wormwood $\frac{1}{2}$ oz., oil origanum $\frac{1}{2}$ oz., oil rosemary $\frac{1}{2}$ oz., soft soap 6 oz.

Roche's Herbal Embrocation.—Specially recommended as an effectual remedy for whooping-cough. Is said to be the only remedy affording a permanent recovery. According to the *Western Druggist*, this remedy consists of asafetida, olive oil, oil of caraway, and oil of turpentine, flavored with oil of wintergreen.

Kendall's Spavin Cure.—Turpentine 1 fl. oz., alcohol 2 fl. oz., camphor 240 gr., iodine 25 gr., petroleum oil (heavy) $\frac{1}{2}$ fl. dr., oil of rosemary 1 fl. dr.

Reave's Embrocation.—Olive oil 1 $\frac{1}{2}$ oz., aq. ammonia 1 oz., Goulard's ext. of lead 1 oz., oil origanum 2 oz.

Elliman's Royal Embrocation.—Oil turpentine $\frac{1}{2}$ oz., oil thyme $\frac{1}{2}$ oz., oil amber, crude $\frac{1}{2}$ oz., soap 130 gr., caustic soda 10 gr., water sufficient 1 pt.

Oil of Joy.—Alcohol 4 pts., gum camphor $\frac{1}{2}$ oz., oil of sassafras 1 oz., oil of cedar 1 oz., tinct. of guaiac 1 oz., tinct. of capsicum 2 oz., water of ammonia 4 oz., chloroform 3 oz.

Cook's Electro-Magnetic Liniment.—Alcohol 1 gal., oil amber 8 oz., gum camphor 8 oz., castile soap (fine) 2 oz., beef's gall 4 oz., aqua ammonia 12 oz.

Great African Wonder.—Alcohol 4 pts., oil sassafras 3 $\frac{1}{2}$ oz., oil origanum 3 $\frac{1}{2}$ oz., spirits camphor 3 $\frac{1}{2}$ oz., tinct. opium 2 oz., chloroform 2 oz., turpentine 2 oz., vinegar 2 oz.

Pride of India Liniment.—Oil lini. $\frac{1}{2}$ gal., gum camphor 4 oz., oil sassafras 2 oz., spirits nitre 2 oz., alcohol 1 pt.

Black Oil Liniment.—Sulph. acid 2 oz., nitric acid 1 oz., quicksilver $\frac{1}{2}$ oz.

Trask's Magnetic Ointment.—Lard, raisins, fine-cut tobacco, each equal parts.

Black Salve.—Olive oil 32 oz., resin (clear) 1 oz., beeswax 1 oz., Venice turpentine $\frac{1}{4}$ oz., red lead 6 oz., gum camphor (powdered) $\frac{1}{2}$ oz.

Ointment of Iodoform.—Iodoform 1 dr., balsam Peru 1 dr., vaseline 1 oz.

Sanative Ointment.—Mutton suet 16 oz., oil sesame 5 oz., oil origanum 1 oz., camphor 2 oz., resin 2 oz., yellow wax 2 oz., borax, powd. $\frac{1}{8}$ oz., glycerine $\frac{1}{2}$ oz.

Green Mountain Salve.—Resin 5 lb., Burgundy pitch, beeswax, mutton tallow, of each $\frac{1}{4}$ lb.; oil of hemlock, balsam fir, oil origanum, oil red cedar, Venice turpentine, of each 1 oz.; oil wormwood $\frac{1}{2}$ oz., verdigris (pulverized) 1 oz.

Sweet's Celebrated Ointment.—Skunk's oil $\frac{1}{2}$ pt., angle worms 1 pt., water $\frac{1}{2}$ pt., bitter-sweet 1 handful.

Cram's Fluid Lightning.—Oil mustard 2 fl. dr., oil cajeput 2 fl. dr., oil cloves 2 fl. dr., sassafras 2 fl. dr., ether 1 fl. oz., tinct. opium $1\frac{1}{2}$ fl. oz., alcohol 20 fl. oz.

Deshler's Salve.—Resin 12 oz., suet 12 oz., yellow wax 12 oz., turpentine 6 oz., linseed oil 7 oz.

PILE REMEDIES.

We shall consider elsewhere the principal method employed by traveling quacks in the treatment of hemorrhoids, and other rectal disorders. We give herewith analyses of a few popular remedies for piles.

Price's Pile Ointment.—English calomel 1 oz., powdered opium $\frac{1}{2}$ oz., pure carbonate lead 1 lb., oxide zinc 1 lb., olive oil 2 lb., fresh lard (without salt) 2 lb.

Witch-Hazel Pile Ointment.—Tinct. hamamelis 12 dr., lan-
oleum 6 dr., petrolatum 16 oz

Seeley's Pile Ointment.—Sulph. morphia 3 gr., tannin 48 gr., pine tar 72 gr., white wax 72 gr., benzoated lard 766 gr.

Rorick's Formula for Injecting Hemorrhoids.—Acid carbolic 2 fl. dr., glycerine 2 fl. dr., aqua $1\frac{1}{2}$ fl. dr., fl. ext. ergot 1 fl. dr. This is one of the secret remedies used for curing hemorrhoids by injection with a hypodermic syringe. This system is now generally acknowledged to be uncertain and dangerous.

Upham's Pile Ointment.—Powdered galls, powdered sugar lead, powdered opium, simple cerate.

MISCELLANEOUS.

Holloway's Pills.—Aloes, rhubarb, capsicum, saffron, sulphate soda.

Cook's Pills.—Powdered aloes, Soc., powdered rhubarb, calomel, powdered soap.

Lady Webster's Dinner Pills.—Powdered Socotrine aloes, powdered mastic, red rose leaves.

John Hill's Pectoral Balsam of Honey.—Each bottle holds $1\frac{1}{4}$ fluid ounces of a brown liquid consisting of a tincture of 9 parts by weight of balsam tolu, 2 parts of prepared balsam of storax, and 1 part of opium in 300 fluid parts of strong alcohol, sweetened with 80 parts of clarified honey.

Dalby's Carminative.—Each bottle contains $1\frac{1}{2}$ fluid ounces of a whitish turbid liquid consisting of $\frac{1}{4}$ fluid ounce of strong alcohol, 1 drop oil of anise seed, 10 drops of tincture of asafetida, a few drops comp. tinct. cardamom and 10 drops of tincture of opium; which mixture, when prepared, is added to a solution of 10 grains of bicarbonate of potash and $\frac{1}{2}$ ounce of sugar in 1 fluid ounce of peppermint, or instead of the latter, in 1 fluid ounce of water intimately mixed with 1 or 2 grains of carbonate of magnesia and one drop of oil of peppermint.

Brandreth's Pills.—Each box contains 24 or 25 pills, each weighing about $2\frac{1}{2}$ grains. The 24 pills consist of 10 grains of the root of May apple, 10 grains of the extract of the same, 30 grains of the extract of poke-berries, 10 grains powdered cloves, 2 to 5 grains of gamboge, traces of Spanish saffron, and a few drops of oil of peppermint.

Ayer's Cathartic Pills.—Each box contains 30 sugar-coated pills, each weighing nearly 4 grains, and consisting of aloes, compound extract of colocynth, gamboge, Spanish pepper, and oil of peppermint.

Blancard's Pills.—These pills consist of iodide of iron, honey, and the powders of licorice roots and marsh mallow roots. They are covered with powdered iron, and coated with balsam of tolu. Each pill contains about $\frac{1}{4}$ grain of iodide of iron.

Franc's Life Pills.—Each box contains about 50 two-grain pills, covered with silver-foil, and consisting of four parts, by weight, of aloes, and one part of gamboge.

Pierce's Golden Medical Discovery.—7 fl. oz. of a dark brown liquid consisting of a solution of 1 dr. ext. of lettuce, 1 oz. honey, $\frac{1}{2}$ dr. tinct. opium in 3 oz. dilute alcohol, and 3 oz. water.

Tropic Fruit Laxative.—Powd. senna leaves, powd. anise seed, tamarinds (pulp), molasses.

Trix, or Jokes.—Powd. ext. licorice, oil cloves, oil cinnamon.

Coe's Dyspeptic Cure.—Fl. ext. yellow root, fl. ext. wild cherry, bicarbonate soda, essence peppermint, simple sirup.

Watt's Anti-Rheumatic Pills.—Powd. aloes 4 dr., powd. gamboge 4 dr., powd. hellebore 2 dr., powd. guaiac $\frac{1}{2}$ dr., calomel $\frac{1}{2}$ dr., precip. sulphide of antimony 15 gr., oil cloves $\frac{1}{2}$ fl. dr., soap 1 dr., spirits camphor sufficient.

Arabian Balsam.—Oleum gossypium 15 oz., oleum origani 1 oz., oleum terebinth 4 dr.

Aseptin.—Borax 2 parts, alum 1 part.

Thieleman's Cholera Mixture.—Oil peppermint 4 dr., chloroform 4 dr., fl. ext. ipecac $3\frac{1}{2}$ dr., fl. ext. valerian $1\frac{1}{4}$ oz., tinct. opium, deod. $1\frac{1}{2}$ oz., ether 2 oz., alcohol 6 oz., sherry wine sufficient to make 16 oz.

Swayne's Ointment.—Claimed to be a cure for tetter, itch, saltrheum, scald head, piles, ringworm, pimples, blotches, barber's itch, and all eruptions of the skin. According to *New Idea*, its composition is sulphur 2 parts, tallow and lard each 3 parts.

Athlophorus.—It is claimed that the following preparation can scarcely be distinguished for the proprietary article: acetate potash 1 dr., salicylate soda 490 gr., sugar 4 oz., caramel 3 drops, water 14 fl. dr.

Ayer's Sarsaparilla.—Fl. ext. sarsaparilla 3 oz., fl. ext. stillingia 3 oz., fl. ext. yellow dock 2 oz., fl. ext. May apple 2 oz., sugar 1 oz. iodide potassium 90 gr., iodide iron 10 gr.

Barnes's Frost Balsam.—Copaiba $\frac{1}{2}$ oz., oil turpentine $\frac{1}{2}$ oz.

Baunsscheidt's Oil.—Croton oil 1 oz., cotton-seed oil 4 oz., oil caraway 2 minims.

Swift's Syphilitic Specific.—This remedy, claimed to have been obtained from a Florida Indian chief, is said to consist of the following ingredients: Oil man's gray-beard root (*chionanthus Virginica*) 1 bushel, prickly-ash root 16 oz., white sumac root 8 oz., red sumac root 8 oz., sarsaparilla root 10 oz., sulphate of copper 8 dr.

Benson's Skin Cure.—This remedy is offered in two forms—for internal use and external application. The internal remedy is said to consist of clover blossoms, yellow-dock root, gentian root, and alcohol, flavored with oil rosemary and oil thyme. The external application is claimed by *New Idea* to consist of acetate of lead, acetate of copper, acetate of zinc, benzoic acid and water. It is warranted to cure all skin diseases, which of course it will not do.

Strong's Arnica Jelly.—Glycerine 1 fl. oz., water 1 fl. oz., starch 120 gr., fl. ext. arnica 2 fl. dr., spirits of bitter almonds (1 in 8) 2 minims, carbolic acid 8 minims.

Boschee's German Sirup.—Oil of tar 1 fl. dr., fl. ext. ipecac 4 fl. dr., fl. ext. wild cherry 6 fl. dr., tinct. of opium 4 fl. dr., carbonate of magnesia 3 dr., water 6 fl. oz., white sugar 10 oz.

Buckled's Arnica Salve.—Ext. arnica 1 oz., resin cerate 8 oz., vaseline 2 oz., raisins, seedless, 8 oz., fine-cut tobacco $\frac{1}{2}$ oz., water sufficient.

Smedley's Fever Powders.—Camphor gum $\frac{1}{2}$ oz., gum myrrh $\frac{1}{2}$ oz., blood-root 1 oz., lobelia (seeds, pods, leaves) 2 oz.

Seven Seals, or Golden Wonder.—Ether 4 parts, chloroform 6 parts, camphor 4 parts, oil peppermint 2 parts, tinct. capsicum 35 parts, alcohol (90 per cent) 50 parts.

Castoria.—Senna 4 dr., manna 1 oz., Rochelle salt 1 oz., fennel, bruised, $1\frac{1}{2}$ dr., boiling water 8 fl. oz., sugar 8 oz., oil wintergreen sufficient.

Chamberlain's Relief.—Tinct. capsicum about 1 oz., spirits camphor about $\frac{3}{4}$ oz., tinct. guaiac about $\frac{1}{4}$ oz., color tinct. to make 2 oz.

Russia Salve.—White pine pitch 2 lb., beeswax 1 lb., olive oil sufficient.

Celerina.—Fl. ext. celery 1 oz., fl. ext. erythroxyton coca 1 oz., fl. ext. viburn. prunifol 1 oz., fl. ext. kola 1 oz., alcohol 2 oz., sugar 2 Troy oz., spirit orange 2 dr., water to make 16 oz.

Rex Magnus.—Boric acid, borax 67 per cent, chloride potassium 15 per cent, water 18 per cent.

Chamberlain's Colic, Cholera, and Diarrhea Remedy.—Tinct. capsicum 20 fl. dr., tinct camphor 16 fl. dr., tinct. guaiacum 12 fl. dr.

Cobb's Pills.—Ext. hyoscyamus $\frac{1}{2}$ dr., ext. conium $\frac{1}{2}$ dr., ext., colocynth $\frac{1}{2}$ gr., ext. nux vomica 4 gr.

Ree's Cholera Mixture.—Spirits chloroform 12 oz., spirits lavender, comp. 12 oz., vin. opium 3 oz., oil of cloves 40 drops.

Radam's Microbe Killer.—According to the *Druggists' Circular*, Radam's Microbe Killer consists of the following ingredients: Sulphuric acid 4 dr., hydrochloric acid 1 dr., red wine 1 oz., well water 1 gal. The first cost of these ingredients would be about five cents. The remedy sells for \$3.00 a gallon. It is warranted to be a sure cure for microbes of every description, which Mr. Radam claims to be the cause of all diseases. Mr. Radam disputes the correctness of the analysis.

Platt's Chlorides.—Magnesium chloride 1½ parts, potassium chloride 1½ parts, sodium chloride 1½ parts, zinc chloride 7½ parts, aluminum chloride 7½ parts, water sufficient quantity 100 parts.

Morehead's Magnetic Plaster is said to be composed of tar and extract of belladonna, equal parts of each.

Elixir Thion Compound.—Powdered rhubarb 5 oz., powdered golden seal 5 oz., sodium hypophosphite 100 gr., sodium sulpho-carbolate 40 gr., alcohol 5 pts., water 40 pts.

Espey's Cream.—Cydonium 1½ dr., ac. boric 4 gr., glycerine 2 oz., alcohol 3 oz., carbolic acid 10 gr., Cologne water 2 dr., rose water to make 1 pt.

Miller's Golden Oil.—The formula for this remedy, which is recommended for both internal and external use, is given by *New Idea* as follows: Essential oil lavender 20 minims, essential oil eucalyptus 20 minims, essential oil sassafras 20 minims, oil turpentine 1 fl. dr., cotton-seed oil 7 fl. dr.

Gombault's Caustic Balsam.—Croton oil 4 fl. dr., cotton-seed oil 2 fl. oz., oil camphor 1 fl. dr., oil turpentine 2 fl. dr., oil thyme ½ fl. dr., kerosene 4 fl. dr., sulphuric acid 20 minims.

Lee's Lithonriptic.—Powdered castile soap 2 oz., carbonate potassium 4 dr., nitrate potassium 2 dr., powdered gum arabic 5 dr., oil juniper 2 fl. dr.

Cuticura Ointment.—According to the *Northwestern Lancet*, this popular ointment consists of petroleum jelly with two per cent of carbolic acid, colored green and perfumed with oil of bergamot.

Heiskill's Tetter Ointment.—This ointment, according to the *Western Druggist*, is simply cerate of sub-acetate of lead.

Pimple Lotion.—Carbolic acid 1 dr., borax 4 dr., glycerine 2 fl. oz., tannin 2 dr., alcohol 3 fl. oz. rose-water 10 fl. oz.

Hardy's Ointment.—According to a French authority, this ointment consists of a mixture of beef tallow, castor oil, and gallic acid, flavored with vanilla.

Lee's Gravel Remedy.—Sapo. Venet. 4 oz., sal. nitre pulv. 4 oz., oil juniper 4 oz., gum arabic pulv. 1 oz., sal. absinth 1 oz.

Hayden's Viburnum Compound.—Cramp bark 4 dr., black haw 2 dr., skunk cabbage 2 dr., sirup 4 dr., tinct. cinnamon enough to make 4 oz.

Lallemand's Specific.—Sulph. quinia 1 dr., sulph. cinchona 1 dr., ext. colocynth 4 dr., wine colchicum seed 8 oz., tinct. verat. viride 1 oz., dilute alcohol 8 oz., sherry wine 31 oz.

Holloway's Ointment.—Yellow wax 10 parts, white wax 10 parts, turpentine 25 parts, lard 50 parts, sweet oil 75 parts.

Kennedy's Medical Discovery.—According to King's American Dispensatory, this much advertised remedy consists of sneezewort 1 oz., bitter-root 4 dr., boiling water 8 oz., proof spirits 10 oz., licorice root 4 dr., white sugar 4 oz., tinct. winter-green 1 oz.

Kaskine.—This remedy consists of a white powder having a sweet taste and no odor. It is claimed by the manufacturers to be the "only medicine that can destroy the germs which cause each particular disease and restore to perfect health." Dr. F. Hoffman, an eminent chemist, has made a careful analysis of several bottles of "Kaskine," purchased from different drug stores, and found that it consists simply and solely of pulverized sugar.

Iodia.—Fl. ext. stillingia 3 oz., fl. ext. prickly ash 1 oz., fl. ext. saxifraga $\frac{1}{2}$ oz., fl. ext. yellow parilla $\frac{1}{2}$ oz., fl. ext. blue flag $\frac{1}{2}$ oz., potassium iodide 256 gr., iron pyrophosphate 256 gr., dilute phosphoric acid $\frac{1}{2}$ oz.

MEDICATED PADS.

As these quackish toys are still offered for sale, although not so much in vogue as a few years ago, our readers may be interested in the following account of the composition of some of the leading "pads":—

Lung Pad.—Grindelia robusta, scull cap leaves, blueberry root, blood root, yerba santa, gum ammoniac, white pine turpentine gum, oil tar, oil eucalyptus, oil sassafras.

Head Pad.—Lupuline, lady's-slipper, Battle's bromidia, fl. ext. Jamaica dogwood, angelica root, oil eucalyptus.

Liver Pad.—Mandrake root, bayberry bark, black root, red cinchona bark, gum guaiac (powder), fenugreek seed (powder), oil eucalyptus.

Catarrh and Croup Pad.—Lobelia (herb), tartar emetic, blood root, blue cohosh, yellow Peruvian bark, pleurisy root, gum myrrh, oil stillingia, oil cajeput, oil cinnamon, oil lavender.

Anti-Constipation Pad.—Mandrake root, aloes (powd.), ext. colocynth comp. (powd.), croton oil, oil sassafras, black root, lady's-slipper.

Day's Kidney Pad.—Black cohosh, gum benzoin (powd.), gum guaiacum (powd.), juniper berries, queen of the meadow, digitalis leaves, oil juniper.

French Uterine Pad.—Blue cohosh, gum guaiac (powder), witch hazel bark, ergot, cinchona bark, angelica root, oil tansy, oil stillingia, oil lobelia, oil lavender, oil eucalyptus.

Stomach Pad.—Bayberry, lupuline, wild ginger, sassafras bark, gum myrrh, lady's-slipper, capsicum, oil fennel, oil cloves.

Corrassa Compound.—For a number of years a man styling himself Rev. Jos. T. Inman, advertised extensively, giving as his address a certain number at Bible House, New York City. He claimed to have suffered from the results of the evil habits of his early youth, and to have discovered, while a missionary in South America, a remedy which afforded him entire relief, after many years of unsuccessful effort. His plan of operation was to offer to furnish, free of charge, a recipe for the cure of the disease. On receiving an application for said precious recipe, he forwarded to his victim a circular containing the formula: "Ext. of corrassa apimis 8 dr., ext. of salarmo umbellifera 4 dr., powdered alkermes latifolia 3 dr., ext. of carsadoc herbalis 6 dr.," with the explanation that the remedies referred to were choice South American herbs, which could be purchased from no one but the Rev. J. T. Inman. As a matter of fact, the names composing the formula are wholly fictitious. No such herbs exist anywhere in the world. An analysis of the compound which was sent by this notorious quack to his dupes, as made by Dr. A. B. Lyons, an efficient chemist, is as follows: Gentian 15 per cent, licorice root 15 per cent, sugar 50 per cent, sodium bicarb. 17½ per cent, cochineal 2½ per cent.

REMEDIES FOR DISEASES OF WOMEN.

Probably no class of invalids are more outrageously imposed upon by quacks and nostrum-venders than ladies who are suffering from some of the diseases peculiar to their sex. The hidden nature of their maladies, and the general ignorance prevailing respecting this class of disorders, render them an easy prey to the cunning meanness of the charlatan. Thousands of women are canvassing the country in the interest of the manufacturers of these nostrums; and there is scarcely a community which has escaped a visitation. As a fair specimen of this class of medical frauds, we may mention—

“Olive Branch.”—The circulars of this nostrum present a picture of a dove bearing an olive branch, suggesting that this remedy is an olive branch of hope to those who are suffering without relief. The following are a few of the preposterous claims made for this remedy:—

“The wonderful Olive Branch. A radical cure for all female diseases. A safe, pleasant, and permanent cure for all female complaints.”

“By the grace of the omnipotent God it works marvels to all that make use of it. The Olive Branch treatment is a mild, simple, vegetable remedy conveniently applied by the patient, and by its tonic, strengthening, absorbent, and healing properties immediately removes all foul ulcers, inflammations, congestions, tumors, and morbid conditions.”

The literary liar of this company is evidently a number-one performer in his line. He does

not strain at a gnat and swallow a camel, but swallows both gnat and camel with equal complacency.

But "What is this wonderful 'Olive Branch' concerning which such presumptuous claims are made?" We placed a specimen in the hands of a competent chemist, who reports to us that its essential ingredients are a poisonous narcotic and *alum*!

Why are these particular drugs selected?—For obvious reasons. Narcotics are the great deceivers among drugs. They benumb the nerves, and so remove pain. Under the delusion that she was being cured, many a woman has been led on from bad to worse, until a condition the most deplorable has been reached. The purpose of adding alum is equally evident, if not equally dreadful in its results. Alum possesses the peculiar property of coagulating the secretion of mucous surfaces, thus forming a parchment-like or skinny substance. This membrane, the user of the nostrum is led to believe, consists of "the base of ulcers, or portions of cancers, polypi, or commencement of tumors," than which nothing could be more infamously false.

Orange Blossom.—This nostrum, said to be a positive cure for diseases peculiar to women, is similar to the preceding. Its constituents are thus given in *New Idea*: Zinc sulphate 1 dr., alum 15 gr., cocoa butter 3 dr., white wax $\frac{1}{2}$ dr., oil sweet almonds $1\frac{1}{2}$ dr., ext. henbane 1 gr.

Grimault's Injection of Matico.—This is a colored solution of sulphate of copper.

Sawyer's Uterine Pastilles.—These precious pastilles, for a few of which a charge of \$8.00 is made, consist, according to the analysis of *New Idea*, simply and solely of flour made into a paste and hardened into small blocks.

Oxone Uterine Wafers.—These wafers do not contain any ozone, but are said to consist of powdered jequirity.

HALL'S "HYGIENIC" TREATMENT EXPOSED.

For several years past, a man styling himself Dr. A. Wilford Hall, of New York City, has been advertising and vending about the country a pamphlet purporting to disclose a discovery made by himself something more than forty years ago. The so-called discovery which Dr. Hall claims to have made is this:—

Having had dyspepsia for a number of years, and being greatly troubled with constipation, he resorted to the enema as a means of emptying his bowels, and discovered, as he asserts, that it was possible to inject a gallon of water into his colon by means of a bulb syringe.

This is the whole of Dr. Hall's so-called discovery. He recommends the enema as a substitute for nature's method of relieving the bowels, to be employed by all persons, sick or well, and claims that persons who will adopt this

method of relieving the bowels will be proof against most of the diseases to which human flesh is heir, mentioning particularly such disorders as Bright's disease of the kidneys, small-pox, and other grave and contagious maladies. This so-called discovery is embodied by Dr. Hall in a cheaply printed pamphlet costing about two cents, for which he charges the modest sum of \$4.00.

The fraudulent business carried on by this man was fully exposed in the July, August, and September numbers of *Good Health* (1890).

Dr. Hall claims that he was the first to employ and recommend the introduction of large quantities of water into the bowels, asserting that "up to the time of my discovery, now forty-one years ago, it was not considered safe or even possible to inject more than a pint of water into the rectum."

In a little work entitled "The Water-Cure Manual," published by Dr. Joel Shew, in 1847, two years before Dr. Hall claims to have made his wonderful discovery, Dr. Shew gives a lengthy description of the enema and its uses. We quote the following sentence referring to the enema: "It may be repeated again and again in as *great quantity as is desired*; a good mode, too, is to take a small injection, *a tumblerful more or less*, that is retained permanently without a movement before morning." This quotation is from

page 52 of "The Water-Cure Manual," copyrighted in 1847. Here we find clearly defined the whole of Dr. Hall's marvelous discovery. In another work, entitled "Processes of Water Cure," also by Dr. Joel Shew, the third edition of which was published in 1849, and the preface of which refers to another edition of the work published prior to 1847, Dr. Shew states (page 147): "The quantity of water to be used will vary; *as much as can be retained, be it more or less, can be taken.*"

Drs. Bell and Condie, two eminent English physicians, wrote in the early part of the present century: "In the stage of collapse, large injections of warm water have been much used in the North of England, and with a very encouraging result. Mr. Lizars directs the water to be as hot as the hand can bear—*in quantity of three or four pints.*"

We are fully justified, in view of the facts we have above presented, in denouncing this man as a full-fledged charlatan, and warning the public against his pretensions as well as against the employment of his so-called discovery in the manner in which he directs, which will almost certainly result in positive and serious injury in the great majority of cases.

ORIFICIAL SURGERY.

The so-called "orificial surgeon" is simply the well-known "pile doctor" under another name. He calls himself an "orificialist," but confines his attention exclusively to the lower openings of the body, and chiefly the rectum. This new-fangled "pile doctor" deals chiefly with "*piles*, *pockets* and *papillæ*." The last two, "pockets and papillæ," he claims to have discovered, and as the terms are new to persons not medically educated, they are well calculated to strike terror to the hearts of the uninformed, and by the charm of his magic words, the orificialist usually succeeds in extracting a fee of from one to five hundred dollars for doing for his patient what any reputable surgeon would do a great deal better for a much smaller sum; or, as perhaps is most frequently the case, the fee is charged for services which were absolutely unnecessary, and in not a few cases positively harmful. The wonderful "pockets" of the orificialist are simply natural structures which have a useful purpose in the rectum. The "papillæ" are a necessary and useful part of this portion of the anatomy. The orificial surgeon has no methods or remedies of real value which are not well known to, and constantly employed by, reputable surgeons.

THE BRINKERHOFF SYSTEM.

This so-called system for the treatment of hemorrhoids, or piles, and other diseases of the rectum, has been so widely advertised and so extensively practiced by traveling charlatans, that we feel sure our readers will be very glad to have some information concerning it. We had opportunities for investigating this method of treatment a number of years ago, and can fully confirm the statements made by Dr. Layton, of Modoc, Ill., who, in a letter to the *Medical World*, says,—

“The Brinkerhoff treatment is a fraud, having no special advantage over any other carbolic-acid treatment, such as has long since been known to the general profession. As to its being painless, I can say from positive experience that this is far from being the case, as I have had several of my patients hint at a suit for malpractice on account of such excruciating pain and soreness; so that I even forgot to ask them for my bill. The ‘Hemorrhoidal Compound,’ as he sees fit to call it, is nothing more than carbolic acid, incorporated with pure sperm oil, or glycerine. As letters patent of U. S. 241, 288, of May 10, 1881, show, his other fluid for injecting into the rectum consists of dist. ext. hamamelis, etc. He has a salve of which carbolic acid is the great desideratum; and added to all this are little paper bags of starch, holding perhaps an ounce, each of which he liberally sells for ten cents, as an adjuvant to his other treatment.”

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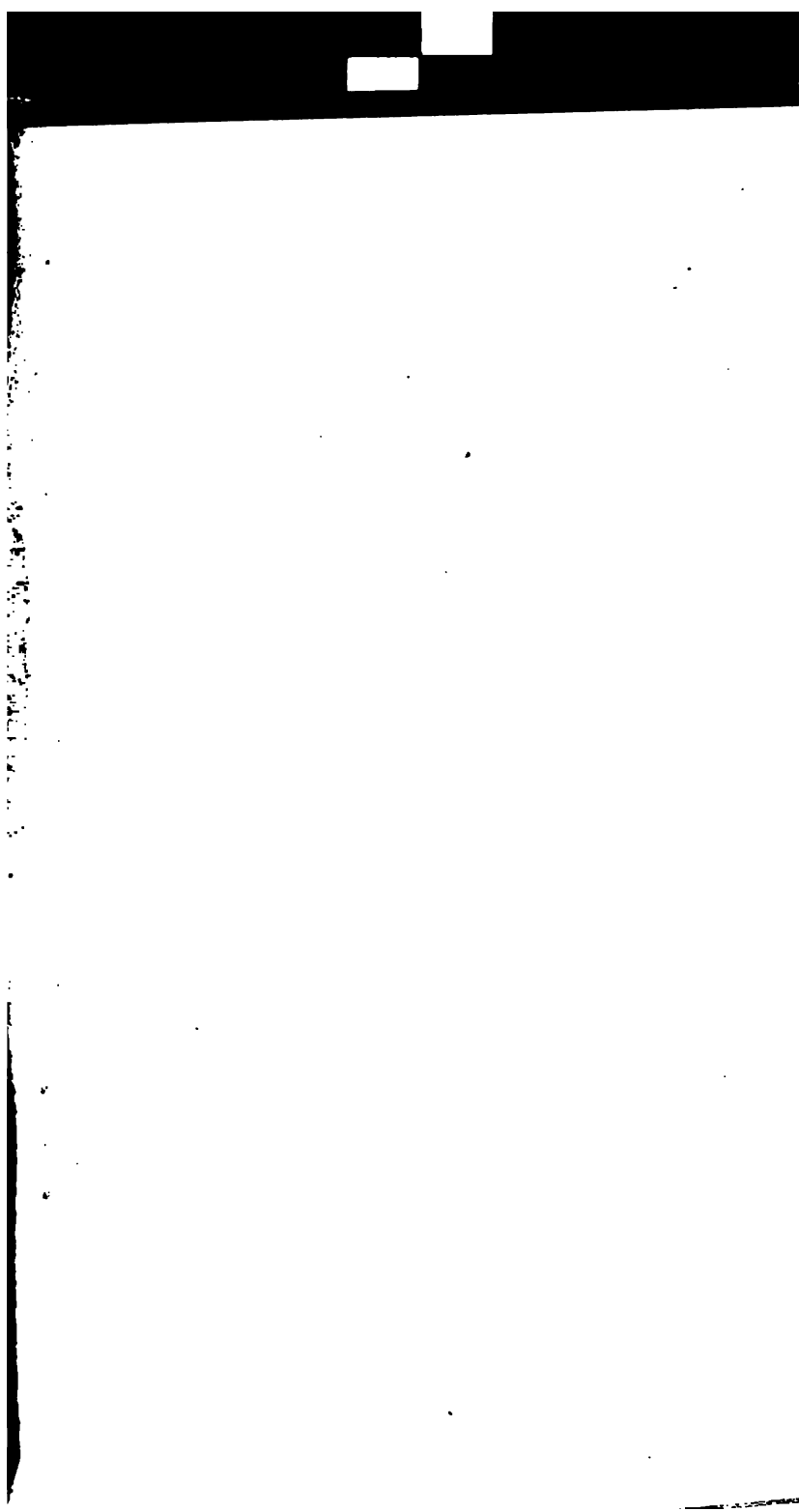
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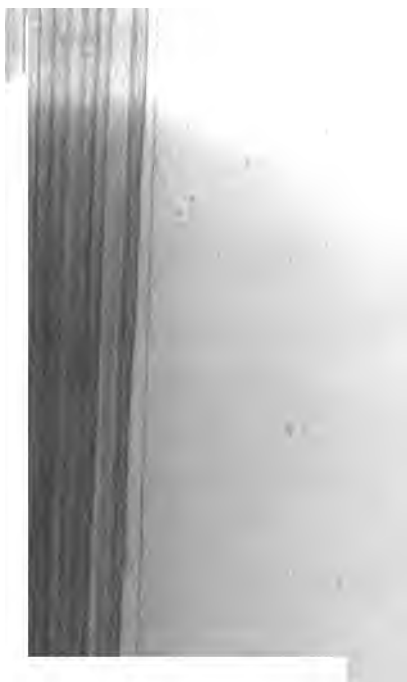
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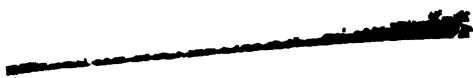
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